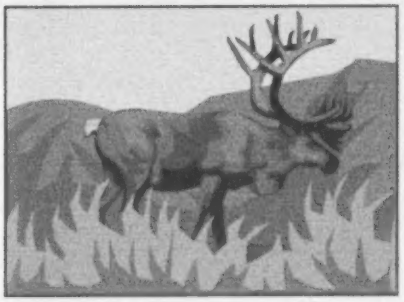
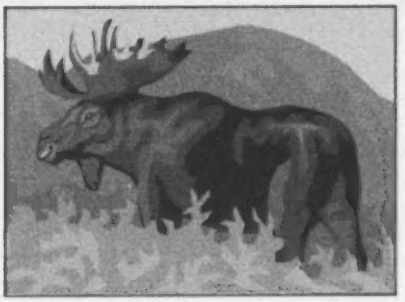




Dehcho Regional Wildlife Workshop
October 21-22, 2008

"If we have more information easier to make decisions when development comes" Lloyd Chicot.

"We have to take care of the interest of nature" Jonas Antoine.

"The land is our supermarket, we need to protect it" Stanley Sanguez.

"We need to combine Science and TK to strengthen our knowledge" Dennis Deneron.

"Dene people have to take care of the land, the land takes care of us" Robert Lamolice.

DEHCHO WILDLIFE WORKSHOP, 21-22 OCTOBER, 2008
FORT SIMPSON RECREATION CENTRE

2008 Wildlife Workshop Delegates

Stanley Sanguez – Jean Marie River First Nation
Billy Norwegian – Jean Marie River First Nation
Francis Betsaka – Nahanni Butte Dene Band
Fred Tesou – Nahanni Butte Dene Band
Dennis Deneron – Sambaa K'e Dene Band (Trout Lake)
Louie Constant – Deh Gah Gotie Dene Band (Fort Providence)
Sam Elleze – Deh Gah Gotie Dene Band (Fort Providence)
George Simba – Ka'a'gee Tu First Nation (Kakisa)
Lloyd Chicot – Ka'a'gee Tu First Nation (Kakisa)
George Moses – Pehdzeh Ki First Nation (Wrigley)
Charlie Talle – Pehdzeh Ki First Nation (Wrigley)
Pat Martel – Katlodeeche First Nation (Hay River Reserve)
Robert Lamolice – Katlodeeche First Nation (Hay River Reserve)
Peter Corneille – Liidlii Kue First Nation (Fort Simpson)
Edward Cholo – Liidlii Kue First Nation (Fort Simpson)
Marie Lafferty – Fort Simpson Metis Local
Jonas Lafferty – Fort Simpson Metis Local

ENR Representatives

Nic Larter – Regional Biologist (Dehcho)
Danny Allaire – Wildlife Technician II (Dehcho)
Carl Lafferty – Renewable Resources Officer III (Dehcho)
Shephen Charlie – Regional Superintendent (Dehcho)
John Nagy – Senior Wildlife Biologist (Yellowknife)
Susan Fleck – Director, Wildlife (Yellowknife)
Joanna Wilson – Protected Area Biologist (Yellowknife)
Allicia Kelly – Protected Area Strategy Intern (Yellowknife)
Jan Adamczewski – Ungulate Biologist (Yellowknife)

Yukon Territorial Government Representative

Troy Pretzlaw – Liard Regional Biologist (Watson Lake)

NNP Representative

Doug Tate – Conservation Biologist (Fort Simpson)

University of Calgary Representative

Danna Schock – Postdoctoral Researcher, Faculty of Veterinary Medicine

Translation provided by Betty Hardisty (Fort Simpson)
Sound provided by Ronnie Antoine of MJC Audio (Fort Simpson)
Catering provided by Bernie Leader and the Bompas School Grade 6 class

Participants

Peter Redvers – Crosscurrent Associates Ltd for Sambaa K'e Dene Band
Gerald Antoine – Grand Chief Dehcho First Nations
Samuel Gargan – Dehcho First Nations
Lee Thom – Dehcho First Nations
Ria Letcher – Dehcho First Nations
Jonas Antoine – Liidlii Kue First Nation
Jim Antoine – Liidlii Kue First Nation
Celine Antoine – Liidlii Kue First Nation
Allan Bonnetrouge – Liidlii Kue First Nation
Mary Jane Cazon – Liidlii Kue First Nation
Phoebe Allaire-Cazon – Liidlii Kue First Nation
Lorayne Moses – Liidlii Kue First Nation
Billy Cholo – Liidlii Kue First Nation
Flora Cli – Nahanni Butte Dene Band
Isidore Simon – Jean Marie River First Nation
Priscilla Canadien – Deh Gah Gotie Dene Band
Nick Sibbeston – Fort Simpson
Kevin Heron – Fort Simpson

The Department of Environment and Natural Resources (ENR), Dehcho Region held a Regional Wildlife Workshop at the Recreation Centre in Fort Simpson on 21-22 October, 2008. This was the fourth regional wildlife workshop; the first was held September 2002 with the others occurring in October 2004 and 2006. During the first workshop there was a decision made to hold all future workshops in October because a later date would not conflict with the fall harvester and would permit increased opportunities for harvesters to participate in the workshop. The key results of the 2006 harvest were direction for the various wildlife research programs, the communicating of results, and a list of 10 action items. The goals of the 2008 workshop were to:

1) provide an update on the status and results of ongoing wildlife research programs that ENR had been conducting since the 2006 workshop,
2) provide an assessment of how well ENR had addressed the 10 action items that had been identified from the 2006 workshop,
3) provide a forum for other agencies, organizations, and ENR research programs to present their findings,
4) provide an open forum for the discussion of any and all regional wildlife issues, and
5) ensure a continued open dialogue about wildlife research, monitoring programs, and wildlife issues between all Dehcho First Nations and ENR.

During Day 1, ENR made a presentation detailing and critiquing how they had addressed each of 10 action items arising from the 2006 workshop. This was followed by presentations on: boreal caribou projects by ENR and Sambaa K'e Dene Band, amphibian work by the University of Calgary (UC), moose and important wildlife areas by ENR, wildlife projects in Nahanni Park by Parks

Canada, and the summer youth ecology camp program by ENR. The walls of the Recreation Centre were adorned with numerous posters showing the results of a wide variety of additional wildlife research programs being conducted in the Dehcho. There was also a table where copies of reports and results from wildlife work done in the Dehcho were available. The posters and the reports table became focal points during coffee and lunch breaks. The report table had to be restocked often during the workshop. Day 2 started with an ENR presentations on bison and how research being conducted in the Dehcho fit into the bigger picture. Following these presentations the floor was open to round table discussions. Many delegates and audience participants provided comment and feedback on a wide variety of wildlife-related topics and issues including the current and ongoing wildlife research programs. Once again the workshop was very well attended, and ENR would like to take this opportunity to thank all of those First Nations who sent delegates to participate in the workshop. What follows is the final workshop agenda, the key discussion items and comments that came forth over the 2-day workshop and the list of action items for ENR to pursue. The discussion items are not listed in any particular order. At the request of delegates we have also included a listing of the action items that resulted from all previous workshops.

Some grade 6 caterers.

A live wood frog.

Sound and translation.

Day 1 – 21 October, 2008

0920 Opening Prayer - Stanley Sanguez

0925 Introductions

0930 Welcoming Comments - Stephen Charlie, Regional Superintendent, ENR

0935 Review of 2006 workshop action items - Nic Larter, ENR

1015 Coffee Break

1040 Boreal Caribou and Development – John Nagy, ENR

1135 Final Report for Woodland Caribou Study – Peter Redvers & Dennis Deneron, Sambaa K'e Dene Band

1220 Lunch catered by Bompas Grade Six

1335 Frogs and Frog Diseases in the Dehcho and Sahtu – Danna Schock, UC

1425 Dehcho Moose Program – Nic Larter, ENR

1455 Coffee Break

1525 Dehcho Youth Ecology Camp – Danny Allaire, ENR

1545 Wildlife Research in Nahanni National Park Reserve – Doug Tate, PC

1615 Review of Draft Important Wildlife Areas in the Dehcho – Joanna Wilson, ENR

1635 Dehcho Boreal Caribou Program - Nic Larter, ENR

1705 Closing Comments

1710 Closing Prayer - Marie Lafferty

Day 2 – 22 October, 2008

0925 Opening Comments and Opening Prayer - Gerald Antoine

0930 Dehcho Bison Program - Nic Larter, ENR

1015 Dehcho Research and the Bigger Picture - Susan Fleck, ENR

1055 Coffee Break

1115 Round table discussions on developing a Nahanni bison management plan, bison harvesting and issues of bison in communities.

1225 Lunch catered by Bompas Grade Six

1335 Round table discussions of boreal caribou working groups, caribou collaring, population monitoring issues, and other community wildlife issues.

1515 Coffee Break

1540 Round table discussion on other community issues and determining action items.

1615 Workshop Closing Comments – Nic Larter, ENR

1620 Closing Prayer - Dennis Deneron

Day 1

Presentation on 2006 Action Items

This presentation stimulated discussion on 1) a need for monitoring furbearers, especially wolves, which are high in numbers. Wolves have been coming into communities. How can numbers be brought down without animal rights activists causing a problem? 2) the fact that traditional knowledge and scientific knowledge work very well together for boreal caribou and because groups of caribou are smaller now than they used to be where do we go? The weather is changing. We don't shoot all animals in a small group but should take only what is needed. Protecting woodland caribou habitat is very important now. They need certain places in order to survive, and we must protect those places. 3) bison tags and the need to change the current system so that there is more accessibility to these tags for people in all communities of the Dehcho.

Presentation on Boreal Caribou and Seismic Lines: How Many Seismic Lines are Too Many??

There was a question about whether the data from all of the collaring studies were being used in the Dehcho Land Use Plan. Those working on the plan are aware of the data but are not using the values because they are currently undergoing peer review. People wondered if the data were being used to look at avoidance of roads and rivers as well as seismic lines. The presentation had focused on seismic lines but yes indeed the data have been used to show avoidance (or less use of an area than expected by random movement) of the Dempster Highway by caribou similar to avoidance of the Enbridge Pipeline by caribou. There was comment that we do not want to see in the Dehcho the same amount of seismic line disturbance as there is in Alberta. Boreal caribou habitat

in Alberta is impacted by forestry and agriculture as well as oil and gas. The oil and gas industry in Alberta has tried to put a positive spin on seismic activity. There is a need to reduce the width of seismic lines and to break up the linearity because we now know that seismic lines act as a barrier to caribou movement. We do not want the linear development we see in Alberta moving northward because most boreal caribou herds in Alberta are declining. We will need to determine threshold levels of impact that are acceptable while maintaining caribou habitat, which is important. Delegates were impressed by the amount of work that had been done not only in the Dehcho but also in the Inuvik and South Slave Regions on boreal caribou and the good use of information collected from collared caribou. There was a question about alternate prey available for predators because predators use seismic lines to make hunting easier. Seismic lines do not kill caribou but the predators that use these lines do. The decline in Cameron Hills caribou noted by delegates may well be related to the high density of seismic lines in the Cameron Hills and the abundance of wolves in the area.

Presentation on Sambaa K'e Dene Band Woodland Caribou Study: Results of 2007/2008 Field Surveys

The decision to initially collar caribou was a hard decision for the residents of the community of Trout Lake to make, but there was a need for baseline studies that were community driven and supported. The elders wanted to know why caribou were not on the cutlines, so more detailed research by the community in addition to the collared caribou location information was required. The collaring information has supported the elders' knowledge about movements. Traditional and scientific knowledge have worked well together for the caribou. Sambaa K'e Dene Band has tried to involve all elders, men and

women in the study and wanted to ensure that the band had their own wildlife studies to bring forward to the table for wildlife and land use planning. They also wanted collar information that was from before, during, and after development so they can test mitigation efforts. There are plans to continue the study this winter by investigating known areas of caribou use.

Presentation on Frogs and Frog Diseases in the Dehcho and Sahtu, NWT

There was a lot of interest in this talk because frogs are an important part of the food chain. If frog populations in the north were to drastically decline like in the south then there would be serious consequences for northern ecosystems. The same kind of pathogens and diseases that have been decimating frog populations in the south are present in the north. We are studying the genetics of the disease and pathogen strains found in the north now. Early detection of diseases and pathogens may aid in preventing the spread of disease. Wood frogs were everywhere in the Dehcho. Wood frogs like small pools, especially those that form on seismic lines. More lines could help spread the distribution of frogs. Chorus frogs were also found but we were unable to verify the presence of the western toad or long-toed salamander in the Dehcho.

Presentation on Dehcho Moose Program

It was noted that ENR was no longer collecting samples to look at contaminants in moose organs, and the preliminary results from the lab indicated that moose harvested from the Mackenzie and Liard River Valleys had levels of cadmium in their kidneys similar to those reported elsewhere in North America. Cadmium levels were higher in kidneys from moose harvested in the Mackenzie Mountains, a finding similar to that from work done in the Yukon. Cadmium levels increase with moose age, but the average age of locally harvested moose

sampled was 4.3 years. Fat levels in bone marrow from harvested moose and comments from harvesters indicated that moose were in good condition. There were comments about the fatness of moose harvested in fall 2008. In response to questions about harvesters seeing winter ticks in moose. They were rarely seen until noticed in early 1950's. People had heard of moose going "mad" and wondered if it was a threat to the north as more white-tailed deer come north. White-tailed deer carry a parasite called the meningeal worm which, if passed along to moose, causes a neurologic disorder and can cause death. This parasite occurs in white-tailed deer inhabiting eastern deciduous forests but is not found in deer in the west and is currently not a concern in the north. There was comment and discussion about increasing the area of the moose survey and sample collection to include traditional areas of Katlodeeche First Nation.

Presentation on Dehcho Youth Ecology Camps

Most comments had to do with the success of the summer camps and the continued need to get youth out and back on the land. There was an interest in seeing the camps running for up to 3 weeks instead of the 7-10 day format but there was also the reality of current costs to run a camp and the fact that a major source of funding had ended. There was discussion about the costs to run the camp, where other funds could come from, what organizations could run the camp, and other funds they might be able to acquire. The ecology camp program needs to continue.

Presentation on Wildlife Research in Nahanni National Park Reserve

Most discussion was related to the study of Northern Mountain caribou of the South Nahanni area. The new study is headed by the Yukon Territorial Government and Parks Canada, in cooperation with the Government of the

Northwest Territories with additional funding from the Canadian Parks and Wilderness Society – NWT Chapter. It has involved deploying radio collars on 30 female caribou in the South Nahanni winter range, which includes parts of NNPR, Dehcho, Sahtu, and SE Yukon. It was indicated that increased hunter access into the area was making harvesting a concern. There is a road to Tungsten. Monitoring the movements and location of, and flying surveys to locate these newly collared animals will provide useful information on their seasonal range use, movements and population fidelity because it is believed that different Northern Mountain caribou "herds" winter in this area.

Presentation on Important Wildlife Areas: Review of Draft Areas in the Dehcho

Most discussion related to this presentation revolved around fine tuning the maps depicting these important wildlife areas, which had been put up on the walls. Delegates added information to what had already been compiled from previous workshops.

Presentation on Dehcho Boreal Caribou Program

Much of the discussion about the boreal caribou presentation was deferred to Day 2 when issues of collaring and the formation of a working group were key topics. It was indicated that caribou were coming back on the Horn Plateau and that the collaring work had also documented use of the plateau. It was noted that the lifespan of a number of the collars currently on female caribou ends over the next 8 months; 8 collars have recently stopped providing satellite locations. There was consensus for the need to continue monitoring Dehcho boreal caribou. However, in order to continue this monitoring it was recommended that there should be 30 functioning collars. This would require deploying more

collars in February 2009; 8 collars would be available if additional deployment was recommended. There might be a need for more than 30 collars if delegates feel that boreal caribou living north and east of the Mackenzie River experience different population pressures from boreal caribou living south of the Mackenzie River. The north portion has less linear development, more burnt areas, and possibly somewhat lower adult survival and calf production than the south portion.

Day 2

Presentation on Nahanni Wood Bison Program

There were many comments about bison being a nuisance, especially in communities, the feeling that they were a novel wildlife or a foreign species, and that elders were frustrated with their presence and what the original intent of bringing bison back in the 1960s really was. It was noted that bison are not a foreign species they were present historically with moose and caribou through the early 1900s. However, because it has been a number of generations since bison were present on the landscape there has been a cultural disconnection with them. In the Yukon they conduct many youth hunting programs with bison to regain that connection with bison as one of the food sources from the land in addition to moose and caribou. It was also noted that the level of consultation associated with the reintroductions of bison in the 1960s and 1980s was not great. Some delegates questioned whether information about bison was just from monitoring movements from an office and whether time was actually spent out on the land with the bison. It was noted that indeed detailed studies in the 1980's and 1990's had been conducted with the Mackenzie bison where the

presenter had spent months at a time out on the land with bison over a 6-year period. It was acknowledged that not as much field time had been spent with the Nahanni population. It was reiterated that community members in Fort Providence, Fort Simpson, and Nahanni Butte have to deal with bison every year and that sometimes it seems as if ENR cares more about the bison than the community residents. It was agreed that there was a need for a committee for a Nahanni bison management plan and that its membership should not be limited to Fort Liard and Nahanni Butte.

Presentation on Dehcho Research and the Bigger Picture

This presentation provided a nice bridge into discussions of wildlife issues because it touched on a variety of topics. There were questions as to the status of the changes to the Wildlife Act, especially the recommendations made by the Wildlife Aboriginal Advisory Group. This group had a vision for future generations with their recommendations. It was noted that completing the Species at Risk Act had taken precedence over the changes to the Wildlife Act, but that now there will be focus on changes to the Wildlife Act which will include using the information provided by the Wildlife Aboriginal Advisory Group. Harvesters who traditionally hunt in the Meander River and Hay Zama areas indicated that they were seeing fewer moose and more bison and noted that aboriginal harvesters from Alberta were provided tags and allowed to harvest bison in the area but NWT resident GHL holders were not aware of these tags and did not know if they would be able to get them to hunt bison. It would be nice to be able to access these bison. It was indicated that this issue would be raised with the Alberta wildlife director at the upcoming wildlife directors meeting. This lead to more discussion about the lack of access to bison tags and/or meat from harvested bison for communities other than those with

allocated tags (Fort Providence, Fort Liard, Nahanni Butte, and Behchoko) and the fact that they couldn't be harvested in some areas. If communities chose not to use some or all of the tags other communities would like the opportunity to use them. This situation is similar to that in other areas in the Northwest Territories where there is an abundance of muskox but no access to GHL holders. It was noted that ENR is certainly aware of these situations and will work with communities to develop management plans that will look at ways of allocating access of tags. There was also a continued worry that bison chase away other wildlife and that hunters following the bison south into the Dehcho will harvest not only bison, but other game from the Dehcho. Other wildlife issues discussed follow.

Discussion on Dehcho Wildlife Issues

There was a discussion about maintaining healthy moose populations, which means responsible harvesting. We need to avoid harvesting females during the spring and a need to discuss with communities restricting moose hunting on the highway corridor. There used to be a 1 km restriction on hunting. Now lots of people hunt the road corridor. There is a need to work at the community level to establish a way to gather moose harvest information.

There was acknowledgement that the Mackenzie Mountain Outfitters had been providing wild game meat to local communities, but there was a concern that the harvest way back in the mountains was not being monitored. It was pointed out that ENR Fort Simpson does a detailed annual monitoring of the harvest and produces an annual report of the harvest. Delegates were glad to hear this and that copies of that report for the 2007 season were available at the workshop. All copies were taken.

There was concern about the abundance of wolves in a number of areas, including the Redknife Hills where moose won't call back because there are too many wolves. There are also too many wolves around the Mackenzie Bison Sanctuary living off bison. Wolves were also coming into communities like Trout Lake and Jean Marie River. How can numbers be reduced, controlled? We need more active trapping and trapper training. Ram snares can be used around communities to control wolves. There is a need for more training with Ram snares. It was suggested that predator management could be incorporated into management plans for bison and caribou. It was indicated that harvesting wolves is not easy and that in some communities, spiritual values and beliefs are such that there is very limited harvest of wolves and that is likely a reason for wolf numbers being high. Wolves are great hunters. We respect them.

There was a comment that no one was trapping beavers, which resulted in lots of areas being flooded out but also provided a lot more food for wolves. More incentives for people to trap beavers might also have an impact on wolf numbers. It was indicated that if incentives were part of any programs or management that the incentives had to be consistent between and amongst all communities.

There was a discussion on the fact that the Western Harvesters Program was not working especially for residents in the smaller communities like Jean Marie River. There needs to be a better way, better incentives, to get people back out onto the land. The costs of machines, gas, and traps are always going up and the limited amount of money available makes it very difficult to stretch out between all harvesters. Such assistance programs need to be better thought out in advance. More people out on the land would make many things improve.

It was noted that the current situation with much reduced barren-ground caribou numbers has created a scare as to the land mass and ecological harmony.

The land mass can support its people but there must be some threshold where this is not the case. Years ago the land supported all those that were living off the land. We do not know what that threshold is today, is it 2000 harvesters? or more? That is why we have wildlife studies but we also have to study human activity. The threshold requires people harvest only what is needed to subsist and share the rest (Dene sharing and caring). It is key to relate wildlife to community harvesting. If one can provide thresholds that relate to community harvesting then communities would be more likely and able to live with restraint to harvesting. This is much better than setting a quota. If quotas are established without relating to community harvesting then they are less likely to be followed.

There was discussion on recognizing the spiritual values especially of boreal caribou but also of other wildlife. It was good to see that spiritual values of wildlife are recognized and acknowledged in the boreal caribou action plan. Protocols need to be established with First Nations peoples on spiritual values, as it is key to addressing cultural needs in the proper context within management plans and strategies. It was noted the value of traditional and scientific knowledge working together. Traditional knowledge is passed down from our forefathers so therefore it really is not our knowledge or owned.

There were comments about the need to reduce wastage. It seems to be worse now than before. Nowadays people take too much and don't share like before. This is disrespectful. Give back to the land, it takes care of us, respect the animal. Now too many people can get licences to hunt and the federal gun rules have made it harder for elders to hunt; they cannot get ammunition. It makes us sad when we see hides left out on the land or at the dump. Can ENR start a program to buy these hides from moose and caribou? It was noted that Industry, Tourism and Investment (ITI) had a program to purchase moose hides.

Again, it was reiterated the need to get kids back out on to the land now so that we can encourage more people to get back into trapping. Programs for youth on the land can and should be held at different times in the year. They should try and conduct them during school breaks. Kids really love to get out on the land. Maybe all the First Nations can get together and build some infrastructure with more permanent facilities out on the land where we can take youth out and teach them about the land.

There was a suggestion that more line transect surveys be used for wildlife studies and not to forget that the entire ecosystem has to be incorporated into the different species programs that are being conducted. Transect studies with local trappers would be good to look at furbearer abundances over time.

There was mention that the commercial fishery on Tathlina Lake left a lot of fish carcasses that could be providing extra food to wolves in the area as well as being responsible for the increase in eagle nests and magpies. There was concern with agriculture making its way slowly north. It is a big issue to the south and can bring in big problems especially with helping deer to come up from the south; we have to be aware of it.

There was also discussion about other more rare wildlife occurrences especially the number of cougar sightings in Fort Simpson in early September. Were cougars following the deer as they moved up from the south? We are certainly getting more observations of deer, but there has historically been a small population of white-tailed deer in the Fort Simpson area for 50 or 60 years based upon elders information about these "jumpers".

There were many positive comments about the workshop and the fact that communication was a two-way street, which made the workshop format so beneficial, government people and people from communities talking together. There were suggestions to have these kinds of meetings more frequently and

maybe in communities other than Fort Simpson. Maybe this kind of meeting can be given to elders groups and youth groups. There was praise about the work that had been done and presented. People learn a lot and share a lot at these meetings. It was noted by delegates themselves that First Nations should chose their delegates wisely, sending only those who are interested to this workshop, and that delegates should attend all sessions. It was suggested that a brief presentation of the workshop final report be made to DFN leadership.

Discussion on Dehcho Boreal Caribou Working Group

It was noted that there had been some discussions about a boreal caribou working group at the previous workshop and that ENR and DFN had some initial discussions on the formation of such a group and possible terms of reference. However, since the change in DFN leadership there were other issues of higher priority needing to be dealt with. The recent ad hoc meetings with ENR and some leaders in the Dehcho to resurrect the group has not followed a proper protocol by leaving some of Dehcho leadership out of the loop. With much of the Dehcho Land Use Plan and other work behind us, now is certainly a time to focus, work together and move forward on such things as a boreal caribou working group. However, we want to avoid duplication for instance with people who have been designated to be members of a barren-caribou working group. Maybe boreal caribou should be brought onto the barren-ground caribou table? Regardless, we need to work together, with communities, and follow established protocols in creating such a group.

Discussion on Caribou Collaring

It was reiterated that a lot of good information had come from the collaring program. Information that had backed up traditional knowledge like

group size and movements and wolf and bear predation on caribou. Also collecting information on movements and locations of caribou in areas where there was limited traditional knowledge has been important. The information has been useful in land use planning and will be useful in the future with pressure from increased industrial development. It was also acknowledged that it was a difficult decision for First Nations people to deploy collars on caribou but that the information gather in the long run was worth the sacrifice of some caribou to be collared.

There were discussions about using other means of tracking animals instead of collars, like implanted chips or ear tags. There is the concern that collars have been shown to cause hairloss and sores on the neck. It was noted that chips and eartags cannot provide our current level of data collection and in order to use them we still must capture and handle the caribou. It is the capture and handling of an animal (an act of disrespect to some people) that remains the most controversial issue. It was indicated by Sambaa K'e delegates that after much work with ENR during the early stages of the collaring program there had been agreement to use a net-gun from a helicopter, not a tranquilizing drug, to capture caribou and to deploy a tear-drop design of collar (to eliminate uneven overlap of the collar on the neck) with an automatic release mechanism. This we believed was the safest and least stressful way to do it and to make sure that the collar is not on for the animal's entire life.

There was concern that collared caribou were left out of groups and might not have calves. It was indicated collared animals are seen in groups and that has been documented on flights with local residents as observers. Some of the collared caribou have had calves for 3 years in a row. We all hope that by deploying a collar on a caribou we have only disrupted its life during that one

day we attached a collar and that the caribou will return to its usual daily, monthly, and yearly routine.

There was discussion about how many active collars should be on boreal caribou in order to continue monitoring the population and whether the 8 available collars should be deployed in February 2009. There was also discussion as to what types of collars should be deployed for future monitoring. There are different costs for different collars, which collect different kinds of information. The least expensive collars are VHF collars but they do not provide locations to satellites. You must fly around and search to find them. Given the huge area, the movement data we already have, and the need to locate and observe the collared caribou at least twice a year, using additional VHF collars, as part of any ongoing monitoring is not advisable. We already have a reasonable amount of highly detailed movement information, which is collected by the most expensive collar type (GPS), so there may not be a need to use GPS collars as part of the ongoing monitoring program; satellite collars may be the best choice. It was noted that ENR continues to attempt to retrieve all collars that have been dropped. It is cheaper to refurbish these collars (satellite and GPS) than to purchase new ones. Delegates indicated that there would need to community discussion on the proposed collaring before a decision could be made on whether to collar animals in February 2009 and where to collar.

Prior to closing the workshop there was a discussion on what action items should result from this workshop. The action items from the 2008 workshop follow:

Action Items from October 2008 Workshop

1. ENR to distribute the Final Report of this workshop to First Nations on a timely basis.

2. ENR to secure funding to host another Regional Wildlife Workshop in 2 years; the timing of the workshop should remain.

3. ENR requests that Dehcho First Nations submit names for membership on the Nahanni Bison Management Plan committee.

4. ENR should work with DFN to seek funds to provide future summer youth ecology camps, and if possible extend the length of such camps.

5. ENR should ensure a wide distribution of Final Report of this workshop, not limited to the agencies and First Nations participants.

6. ENR should look into making a brief presentation of the Final Report of this workshop at a DFN Leadership meeting, likely in January 2009.

7. ENR should endeavour to deploy as many of the 11 available collars on Nahanni Bison as soon as possible.

8. ENR should extend the current moose and boreal caribou programs to include traditional harvesting areas of the Katlodeeche First Nation.

9. ENR should forward letters to First Nations requesting them to provide ENR with suggestions and guidance for future deployment of collars on boreal caribou. Information requested would include where to deploy collars, how many collars to deploy, type of collars to deploy and whether to pursue the deployment of collars in February 2009. (8 collars will be available).

10. ENR should follow up with the Grand Chief on the formation of a working group for boreal caribou.

11. ENR to provide workshop to Jean Marie River and Trout Lake on fur handling and wolf snaring techniques.

12. ENR to follow up with ITI regarding access to Western Harvester Assistance Program for Jean Marie River and distribute information on moose and caribou hide program.

13. ENR to include discussion of predator management programs when developing bison management plans and the boreal caribou action plans.

A listing of action items from previous wildlife workshops.

2006 Workshop

1. ENR to ensure that the final report of the workshop is distributed to all First Nations in a timely basis.
2. ENR to ensure that these workshops become a biannual event, and that participation by elders and youth of the region is actively supported and encouraged. The current timing is good.
3. ENR to ensure that a bison management plan is developed for the Nahanni Bison Herd.
4. ENR to initiate discussions with trappers in the Dehcho communities to stimulate cooperation in designing and conducting basic research and monitoring programs.
5. ENR to continue seeking proposals for hosting the summer youth ecology camp so that the camp curricula can be varied and can be held in different locations in the Dehcho.
6. ENR to seek funding for conducting an additional youth ecology camp during a different season of the year, preferably starting with a winter camp when students could be taught trapping.
7. ENR to actively pursue a collaring program for Nahanni Bison to provide baseline information on movement and range of distribution.
8. ENR to pursue the idea of a working group for boreal caribou in the Dehcho by presenting it as a topic for discussion at the November, 2006 DFN leadership meeting in Fort Providence.
9. ENR to ensure that the 5 GPS collars and all available satellite collars are deployed on boreal caribou throughout the region in January 2007.

10. ENR to ensure that once the results of the elemental analyses from moose organs are received, that they are analyzed and a plain language report of the results is circulated as soon as possible.

2004 Workshop

1. ENR to ensure that the final report of the workshop is distributed to all First Nations in a timely basis.
2. ENR to ensure that these workshops become a biannual event, and that participation by elders and youth of the region is actively supported and encouraged.
3. ENR to ensure that a bison management plan is developed for the Nahanni Bison population.
4. ENR to initiate discussions with trappers in Dehcho communities to stimulate cooperation in conducting basic research and monitoring programs.
5. ENR to discuss changes and modifications to the current youth ecology camp location, timing, and format with local communities and DFN and investigate other available option for the camps.
6. ENR to continue to promote and support community wildlife monitoring programs.
7. ENR to support and self-management programs related to wildlife harvest that may be initiated by local First Nations.

2002 Workshop

1. ENR to ensure that the summary and hard copy of the presentations covered at the workshop is distributed to all Dehcho First Nations.
2. ENR to arrange meetings and discussions with those First Nations that were unable to send delegates to the workshop (Trout Lake, Kakisa, Fort Liard). For the Kakisa meeting the Regional Biologists from both the South Slave and Dehcho should attend.
3. ENR to circulate letters to schools in the Dehcho indicating that there is now a Regional Biological Program with ENR and that they are available to make school presentations if requested.
4. ENR to explore options and develop a proposal for how a science camp/research station could be established in the Dehcho.
5. ENR to identify ways that moose populations in the Dehcho could be monitored at regular intervals.
6. ENR to identify ways that the Nahanni bison population could be monitored regularly.
7. ENR to identify ways that the status of boreal caribou in the Dehcho could be clarified and the potential impacts of oil and gas exploration and development on boreal caribou could be studied in the Cameron Hills area and possibly other key areas in boreal caribou range in the Dehcho.
8. ENR to identify ways that community-based monitoring of wildlife health could be implemented in the Dehcho.
9. ENR to identify ways that monitoring the harvest of wildlife in the Dehcho could be enhanced.
10. ENR to identify appropriate indicators for monitoring and assessing environmental and landscape change (including those resulting from climate change) that could be established in the Dehcho.

11. ENR to identify studies that are needed to support protected areas initiatives in the Dehcho.
12. ENR to maintain contact and dialogue with all Dehcho First Nations to ensure that all research and monitoring programs are developed and implemented together.

Appendix 1.

Review of 2006 Dehcho Regional Wildlife Workshop Action Items

Presented by Nic Larter, ENR Fort Simpson

Dehcho Regional Wildlife Workshop
Fort Simpson, NT
21-22 October, 2008

Co-Sponsored by DFN and ENR

In October, 2006, The Department of Environment & Natural Resources (ENR) and Dehcho First Nations (DFN) jointly hosted a third Dehcho Regional Wildlife Workshop in Fort Simpson.

The main objectives of the workshop were to: review the progress made on action items from the October 2004 workshop, provide an update of the various regional wildlife research programs (ENR and other agencies), and provide an open forum to discuss regional wildlife programs and issues to ensure open dialogue between ENR and Dehcho First Nations.

At the end of the workshop 10 follow-up activities were recommended by the delegates in attendance.

What follows is a description of the activity and the action by ENR on each item.

Item #1

Ensure that the final report of the workshop is distributed to all First Nations in a timely basis.

Action:
CD transcripts of the audio files, digital copies of presentations and a hard copy of the final report, including all presentations were forwarded to all First Nations on 9 November 2006.

Item #2

Ensure that these workshops become a biannual event, and that participation by elders and youth of the region is actively supported and encouraged. The current timing of the workshop is good.

Action: Secured funding to conduct 4th Biannual Dehcho Regional Wildlife Workshop and to cover the costs for 2 participants from each First Nation. Encouraged each First Nation to send 2 participants to the Workshop and to include youth, elders, harvesters and council members as participants. Maintained the timing of the Workshop.

Item #3

Ensure that a bison management plan is developed for the Nahanni Bison Herd.

Action: ENR published a comprehensive report on the Nahanni bison population in 2007. The NWT Wood Bison Management Strategy is currently being drafted. Funding has been secured for a committee to develop a management plan. ENR Fort Simpson has continued to monitor the population, including deploying radio collars on animals, and attempting to control the presence and movement of bison in Fort Liard.

Item #4

Initiate discussions with trappers in the Dehcho communities to stimulate cooperation in conducting basic research and monitoring programs.

Action: ENR continues to provide trapper training programs and to collect wolverine carcasses. ENR assisted Sambaa K'e with a track counting program. ENR HQ is developing a generic snow track count program which they would like to bring out to trappers in Dehcho communities as a basic monitoring program. ENR completes annual snowshoe hare and small mammal monitoring programs. ENR Fort Simpson has requested that results of the wolverine carcass study be circulated.

Item #5

Continue seeking proposals for hosting the summer youth ecology camp in different locations in the Dehcho.

Action: DFN/ENR solicited proposals for hosting and running summer ecology camps in 2007 and 2008. The camp has been held in different locations.

In 2007 the camp was at Cli Lake. In 2008 camp was at Paradise Creek (Trout Lake). Camps continue to be well attended and a great experience for the youth that participate. However, there have been fewer proposals for hosting the camp in recent years, and 2008 was the last year from a major funding source.

Item #6

Seek funding for conducting youth ecology camps at different times of the year so students could learn additional skills.

Action: DFN/ENR has found it difficult to maintain current funding levels for the summer camps in future. Different school scheduling for communities in the region makes it difficult to coordinate a camp during winter.

Item #7

Actively pursue a collaring program for the Nahanni wood bison population to address range distribution and movements

Action: ENR secured funding and deployed 8 of 12 collars on bison in July 2007. High river water levels restricted the operation. Three collared bison died over the past 15 months: 1 in a vehicle collision, 1 drowned, and 1 was shot. ENR plans to deploy up to 11 additional collars in November 2008.

Item #8

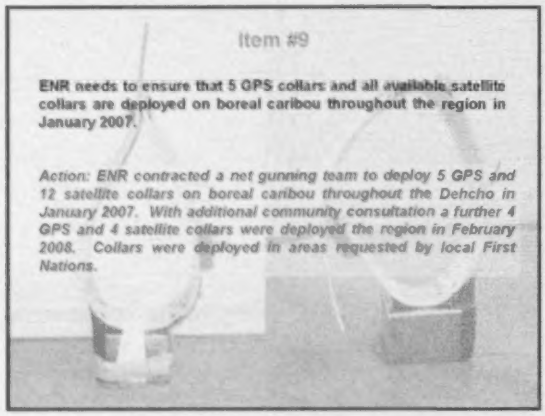
ENR needs to pursue the idea of a working group for boreal caribou in the Dehcho.

Action: ENR made a presentation to DFN leadership in Fort Liard in February 2007. Since then, discussions between ENR Deputy Minister and Dehcho leaders at several meetings have lead to the agreement of a Boreal Caribou Working Group with members from 4 communities – Trout Lake, Kakisa, Jean Marie River and Nahanni Butte. Terms of reference have been drafted.

Item #9

ENR needs to ensure that 5 GPS collars and all available satellite collars are deployed on boreal caribou throughout the region in January 2007.

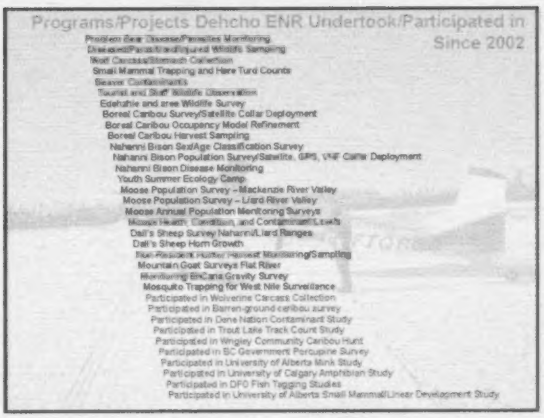
Action: ENR contracted a net gunning team to deploy 5 GPS and 12 satellite collars on boreal caribou throughout the Dehcho in January 2007. With additional community consultation a further 4 GPS and 4 satellite collars were deployed the region in February 2008. Collars were deployed in areas requested by local First Nations.



Item #10

ENR needs to ensure that the results of the elemental analyses from moose organs are circulated in a plain language report as soon as possible.

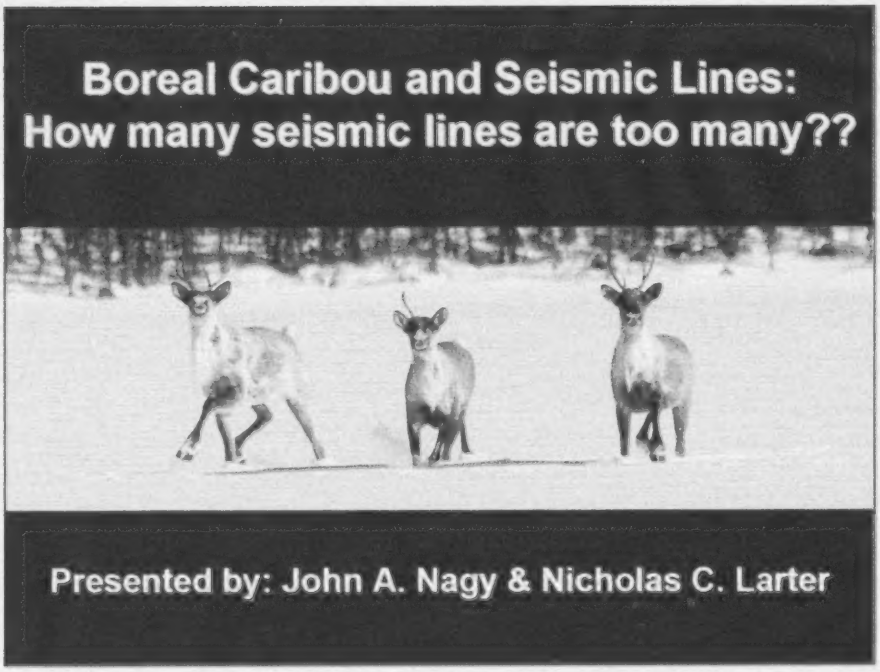
Action: ENR has presented results at community meetings and will do so at this Wildlife Workshop. ENR is working with the Health Department to produce a plain language document of the results for circulation.


Programs/Projects Dehcho ENR Undertook/Participated in Since 2002
Problem Bear Disease/Parasites Monitoring
Disease/Parasite/Injured Wildlife Sampling
Wolf Carcass/Stomach Collection
Small Mammal Trapping and Hare Turd Counts
Beaver Contaminants
Tourist and Staff Wildlife Observation
Edehzhie and area Wildlife Survey
Boreal Caribou Survey/Satellite Collar Deployment
Boreal Caribou Occupancy Model Refinement
Boreal Caribou Harvest Sampling
Naherni Bison Sex/Age Classification Survey
Naharni Bison Population Survey/Satellite, GPS, VHF Collar Deployment
Naherni Bison Disease Monitoring
Youth Summer Ecology Camp
Moose Population Survey – Mackenzie River Valley
Moose Population Survey – Liard River Valley
Moose Annual Population Monitoring Surveys
Moose Health, Condition, and Contaminant Levels
Dall's Sheep Survey Naharni/Liard Ranges
Dall's Sheep Horn Growth
Non-Resident Hunter Harvest Monitoring/Sampling
Mountain Goat Surveys Flat River
Monitoring ENCana Gravity Survey
Mosquito Trapping for West Nile Surveillance
Participated in Wolverine Carcass Collection
Participated in Barren-ground caribou survey
Participated in Dene Nation Contaminant Study
Participated in Trout Lake Track Count Study
Participated in Wrigley Community Caribou Hunt
Participated in SC Government Porcupine Survey
Participated in University of Alberta Mink Study
Participated in University of Calgary Amphibian Study
Participated in DFO Fish Tagging Studies
Participated in University of Alberta Small Mammal/Linear Development Study

Appendix 2.

Boreal Caribou and Seismic Lines: How Many Seismic Lines are Too Many??

Presented by John Nagy, ENR Yellowknife



Boreal Caribou and Seismic Lines: How many seismic lines are too many??

Presented by: John A. Nagy & Nicholas C. Larter

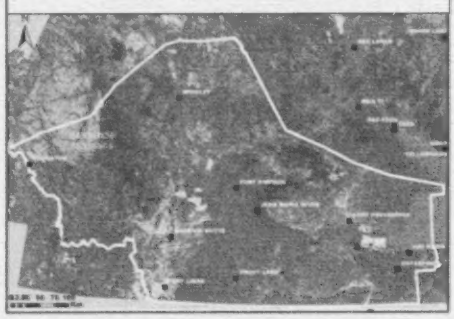
Overview

- Main impacts on the land in the Dehcho
- How do caribou respond to some of these impacts
- How many seismic lines are too many??

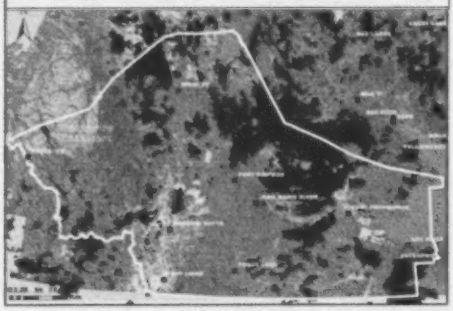
Dehcho

Main impacts on the Land

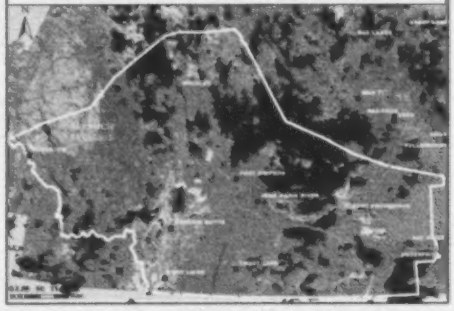
Boreal Caribou Habitat



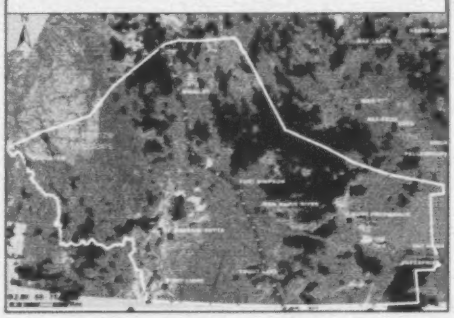
Areas Burned 1957-2007



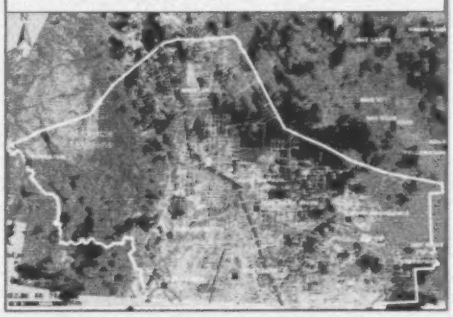
Roads



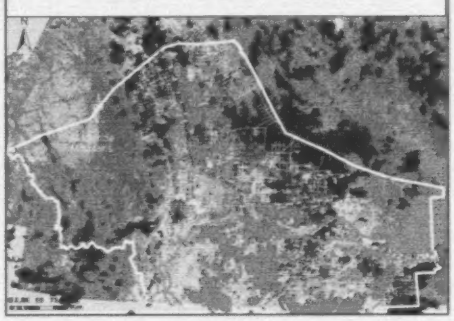
Pipelines



Seismic Lines



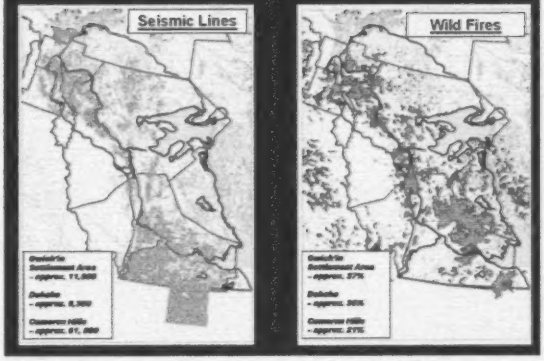
Caribou Locations



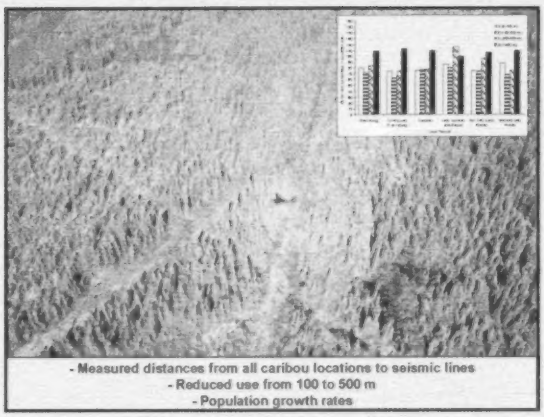
How do caribou respond to seismic lines??

Location of Study Areas

Main Impacts on the Land



- Do caribou use areas near seismic lines?



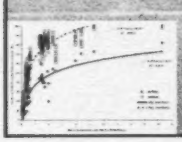
- Measured distances from all caribou locations to seismic lines
- Reduced use from 100 to 500 m
- Population growth rates

Do caribou steps and paths cross seismic lines?

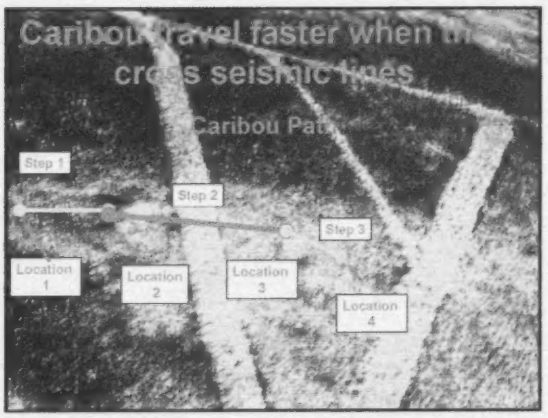
Caribou Steps and Paths

Fewer steps in a caribou path crossed seismic lines

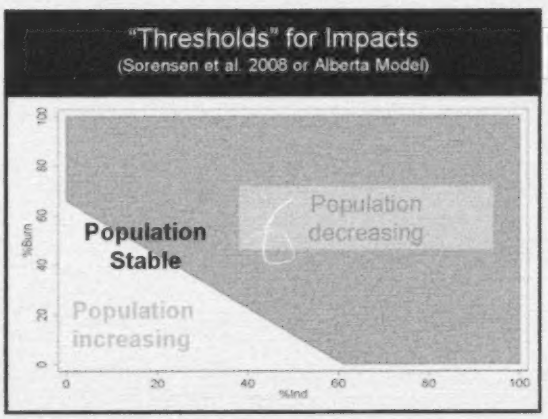
When a step crossed seismic lines, it crossed fewer seismic lines



Do caribou travel faster when they cross seismic lines?



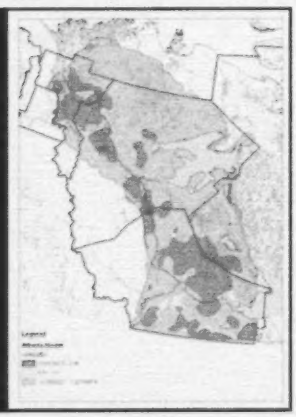
How many seismic lines are too many to maintain stable or growing populations of boreal caribou?



Mapping Sorensen's (in press) "Alberta Model" at the landscape level for boreal caribou in the NT

(Mean estimates for intercept and coefficients for % industrial foot print and % burned minus 1 SE used to generate map)

Predicted Population Growth Rate
Red: lambda <= 0.99
Yellow: lambda >0.99 and <= 1.01
Green: lambda > 1.01



Mapping Sorensen's (in press) "Alberta Model" at the landscape level for boreal caribou in the NT

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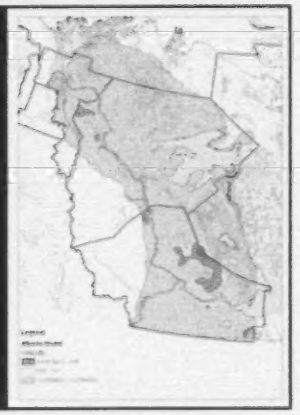
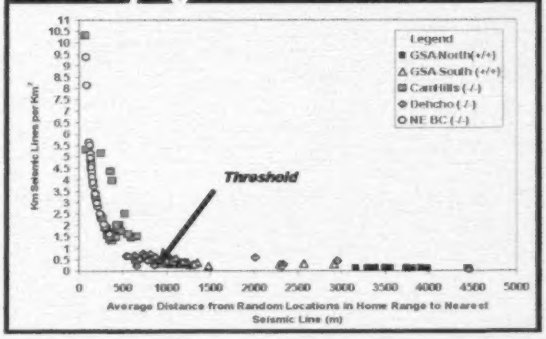


Alternatives???

Measures from perspective of caribou

Average distance to linear features at home range level

Habitat Thresholds: Anthropogenic Linear Features



Summary

- Caribou use areas near seismic lines less than if the were wandering on the land.
- Caribou populations that can mostly use areas more than 500 m from a seismic line, are increasing.

Summary

- Caribou populations that can mostly use areas more than 100 or 250 m from seismic lines, are decreasing.

Caribou use areas near seismic lines less than if the were just wandering around in their area

Summary

- Caribou behaved differently when they were crossing seismic than if they were just wandering in their areas.
  - Fewer steps crossed seismic lines
  - Fewer seismic lines crossed per step
  - Caribou travelled faster when they crossed seismic lines

Seismic Lines are permeable barriers to the movement of boreal caribou

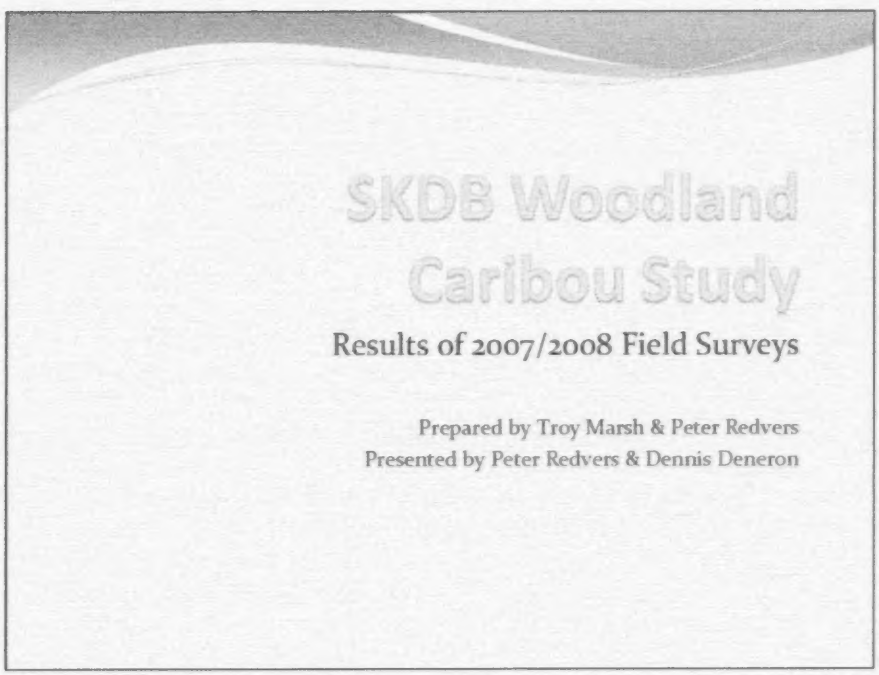
Summary

- The "Alberta" cumulative effects model does not work well in the Dehcho or the rest of the NT.
- Our work suggests that the threshold level for seismic lines is around 0.5 km per sq. km.

Appendix 3.

Sambaa K'e Dene Band Woodland Caribou Study: Results of 2007/2008 Field Surveys

Presented by Peter Redvers and Dennis Deneron for Sambaa K'e Dene Band


SKDB Woodland Caribou Study
Results of 2007/2008 Field Surveys
Prepared by Troy Marsh & Peter Redvers
Presented by Peter Redvers & Dennis Deneron

SKDB Woodland Caribou Study

Results of 2007/2008 Field Surveys

Prepared by Troy Marsh & Peter Redvers
Presented by Peter Redvers & Dennis Deneron

Why Study Woodland Caribou?

- Community concerns initially expressed in SKDB TK assessment of proposed MGP
- Woodland caribou are sensitive animals and are easily disturbed by activity and noise
- Maintaining adequate overwintering habitat along MGP corridor is important for healthy caribou
- Community-based research can contribute to better wildlife management planning
- Take actions and make decisions about the land that best suit the needs of the community

Study Plan

- Using series of field surveys, begin to document over-wintering use of pipeline corridor area between Sambaaliah and K'eotsee
- Consult with local elders / harvesters before and during field work for direction and interpretation of survey results
- Compare field survey information with other sources of data

Field Survey Methods

- Planning with elders / harvesters
- Four 3-day survey sessions – Nov. Dec. Jan. Feb.
- Followed 72 km of pipeline corridor plus accessible cutlines and open areas on snowmobile until caribou tracks intercepted
- Recorded caribou, moose and wolf tracks

Field Survey Methods cont'd

- Photographed and recorded coordinates of all caribou evidence including tracks, craters and pellets
- Four surveyors – 3 community fieldworkers from SKDB and 1 wildlife technician from Yellowknife

The Woodland Caribou Study Crew

Study Area

Session 1: November

Caribou Tracks = 21 Avg. Group Size = 2

Session 2: December

Caribou Tracks = 14 Avg. Group Size = 3

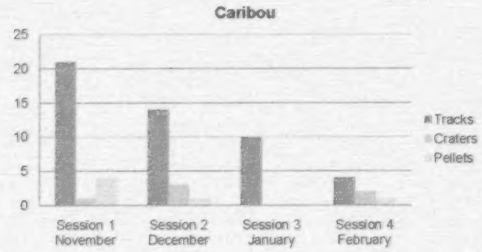
Session 3: January

Caribou Tracks = 10 Avg. Group Size = 2

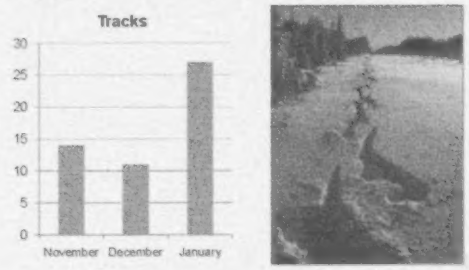
Session 4: February

Caribou Tracks = 4 Avg. Group Size = 2

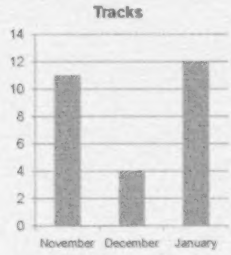
Seasonal Movement within Corridor



Moose



Wolf



Field Survey Analysis

- Ongoing consultation with SKDB elders / harvesters in regards to seasonal caribou movements and habitat preferences (before and between field surveys)
- GIS to assess distribution and seasonality of tracks encountered
- Caribou pellet analysis by ENR (animals healthy)
- Correlation of existing information / data
  - Compare with earlier 2003 and 2007 data
  - Review of ENR collared caribou data
  - Use of Ducks Unlimited Canada Earth Cover Classification to digitally assess habitat preference (incomplete)

Elders' Knowledge

Areas where woodland caribou have been observed or harvested during mid-winter

Some of these areas will used as reference for further field work and data analysis

Elders' Knowledge

- As winter progresses, caribou leave open, snow-crusted areas for the softer snow found in denser (closed) forests -- easier for foraging
- When snow becomes too deep for ground lichens, caribou feed on tree lichens found in mature spruce forests
- Caribou establish trails in forest when snow is too deep and reuse the trails to move faster and escape predators

Elders' Knowledge

- Woodland caribou spread out over a wide area during the summer, begin to come together in the fall, congregate in larger groups and smaller areas in the middle of winter, and begin to spread out again in the spring
- Chasing, handling, and collaring puts stress on the animals. Collaring can creates sores and may also result in caribou being avoided by other caribou and be at a higher risk of predation

Movement of Collared Caribou: Oct. to Dec. (ENR Data)

Mean Area (km²)	Range (km²)
728	105 - 1940

Movement of Collared Caribou: Jan. to March (ENR Data)

Mean Area (km²)	Range (km²)
62	6 - 173

Seasons Combined

Seasons	Mean Area (km²)	Range (km²)
Oct - Dec	728	105 - 1940
Jan - Mar	62	6 - 173

Correlation of Collared Caribou Data

- Collaring data supports elders' description of winter movement patterns (shift to smaller areas in mid-winter)
- Elders' and collaring data consistent with field survey data
- Field survey provides some indication of numbers and groupings
- Could not establish any direct correlations between collared caribou and surveyed tracks - so could not document whether collars affected grouping / herding patterns

Correlation of Ducks Unlimited Earth Cover Classification Data

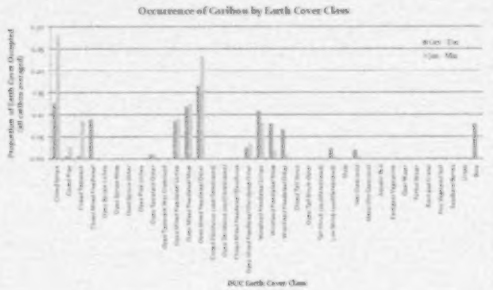
- Classification of 1.9 million hectares using a portion of a Landsat 7 Enhanced Thematic Mapper (ETM) satellite scene acquired on June, 2001.
- Used successfully by Ducks Unlimited Inc. for earth cover mapping in boreal Alaska and Canada and provides an accurate digital earth cover inventory of the Dehcho region.
- The overall accuracy of the final classification is 84%.

D.U.C. Earth Cover Classification

D.U.C. Earth Cover Classification & Woodland Caribou

- Use DUC's earth cover classification to indicate vegetation types that represent preferred habitat by overwintering caribou
- Extrapolate from these vegetation types other key areas that occur throughout the study area

Earth Cover & Caribou Use Preliminary Analysis (see handout)



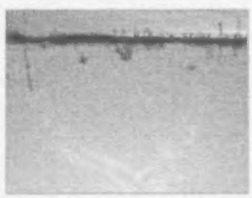
Preliminary Conclusions

- Evidence shows that woodland caribou overwinter in the vicinity of the corridor area
- Use of the corridor is more active and widespread in early winter than mid-winter
- Closed spruce forest areas appear to be preferred overwintering habitat, with continued use of more open areas, likely for some foraging activities (grasses)
- *Begin MGP construction activities after caribou have settled into preferred habitat areas (late December) – protect and avoid preferred habitat areas*

2008-2009 Plan

Conduct further surveys and data analysis to:

- Identify and more clearly describe potential overwintering habitat areas that may occur within the study area
- Estimate potential number of animals utilizing overwintering habitat areas



Next Steps

- Further analyze DU data to identify digital features of known over-wintering habitat – particularly preferred 'combinations' or mixes of earth cover
- Meet with SKDB elders / harvesters to plan next field trips – further discuss key habitat features
- Lay trails toward known and suspected over-wintering habitat in early winter – document key features
- Visit known and suspected over-wintering habitat in January and February on foot to gauge caribou usage
- Prepare summary report with mitigation recommendations

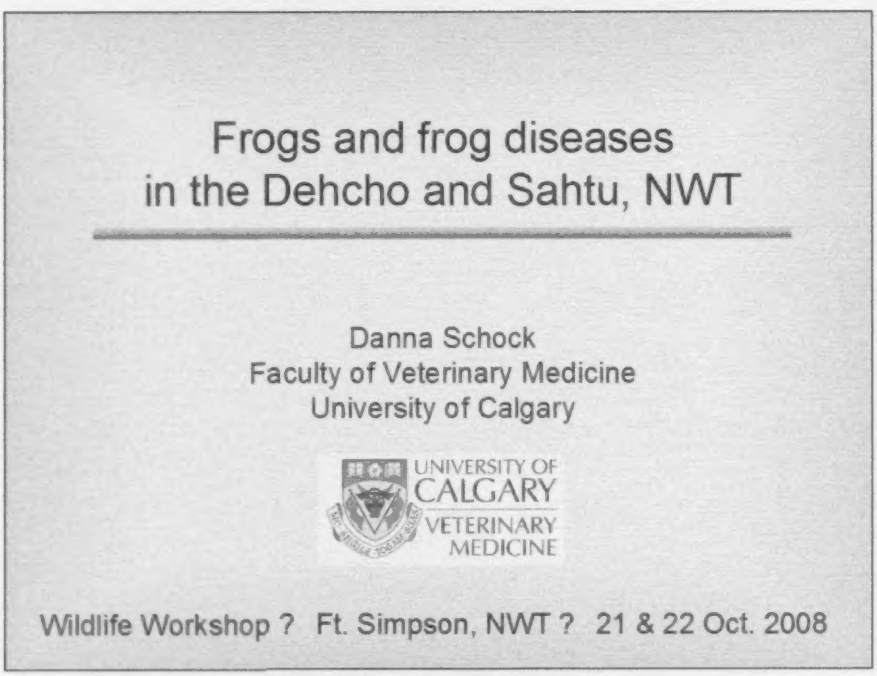
Contributions

- Mahsi to ENR for preliminary support for the study project – assistance with early 2007 field work and analysis of pellets; sharing of collaring data
- Mahsi to INAC for providing study funding through the MGP Office
- Mahsi to Ducks Unlimited for sharing earth cover classification data with Sambaa K'e Dene Band
- Mahsi Edward, Tony, Arthur, Victor and Margaret, Dolphus, David, Fred Jumbo; Tom, Ron Kotchea; Joe, Freddy Punch; Dennis, Johnny, Marie, Mary Deneron; Andrew Lomen; and other participating elders / harvesters.

Appendix 4.

Frogs and Frog Diseases in the Dehcho and Sahtu, NWT

Presented by Danna Schock, University of Calgary


Frogs and frog diseases
in the Dehcho and Sahtu, NWT
Danna Schock
Faculty of Veterinary Medicine
University of Calgary
UNIVERSITY OF CALGARY
VETERINARY MEDICINE
Wildlife Workshop ? Ft. Simpson, NWT ? 21 & 22 Oct. 2008

Frogs and frog diseases in the Dehcho and Sahtu, NWT

Danna Schock
Faculty of Veterinary Medicine
University of Calgary

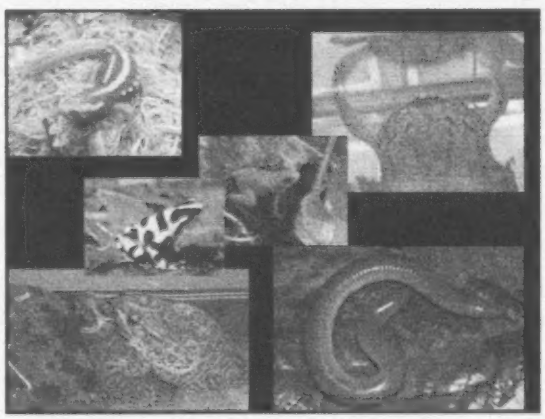
Wildlife Workshop — Ft. Simpson, NWT — 21 & 22 Oct. 2008

Collaborators, Funding, Logistical Support

Danny G. Allaire & Nicholas C. Larter • ENR-Ft. Simpson
Suzanne Carrière & Robert J. Gau • ENR-Yellowknife
Glen Guthrie • Sahtu Renewable Resources Board
Alasdair Veitch & Richard Popko • ENR-Norman Wells
Gregory Ruthig & James P. Collins • Arizona State University
Douglas P. Tate • Nahanni National Park Reserve
Susan J. Kutz • University of Calgary

Permission & cooperation to conduct surveys

- Acho Dene Koe Band
- Dehcho First Nations
- Ft. Liard Metis Nation Local 67
- Ft. Simpson Metis Nation Local 52
- Liidli Kue First Nation
- Nahanni Butte Dene Band
- Norman Wells Renewable Resource Council
- Sahtu Renewable Resources Board



Amphibians – why do they matter?

Important link in food webs – ***everything is connected***

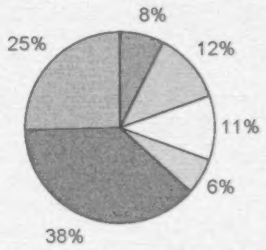
- tadpoles eat algae and water plants
- frogs eat bugs and worms
- lots of other animals eat frogs and tadpoles

Amphibians are also important indicators of ecological health – and change

Amphibians are sensitive to change
- pollution
- weather patterns

Healthy amphibian populations need healthy ecosystems
- need healthy breeding ponds
- need healthy land for overwintering

IUCN Red List status for amphibians - 2008 data



IUCN Red List categories

Categories	Birds (~9800 sp)	Mammals (~5400 sp)	Amphibians (~6000 sp)
Globally threatened	1222 12 %	1141 24 %	~1900 32 %
Critically endangered	179 2 %	188 3 %	~475 8 %
Data deficient	66 < 1 %	836 15 %	~1580 25 %

www.iucn.org

Causes of amphibian declines

Historic
- Overharvest
- Introduced species
- Land use change

Recent
- Global Change
- Contaminants
- Infectious diseases

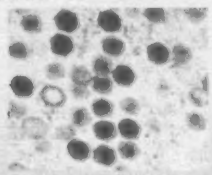
Collins & Storfer. 2003. Diversity & Dist.

Two pathogens associated with amphibian declines

Ranaviruses – infect fish, amphibians & reptiles

(Family Iridoviridae)

destroys kidney, liver, intestine



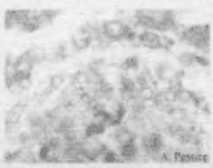
Two pathogens associated with amphibian declines

Chytrid – a fungal pathogen of frogs and salamanders

Batrachochytrium dendrobatidis

"B.d."

infects the skin
↓
disrupts blood ion balance
↓
death



Why study frogs and frog diseases in the NWT?

The Short Answer:

It's "simpler" here.

Things are happening "faster" here.

Why study frogs and frog diseases in the NWT?

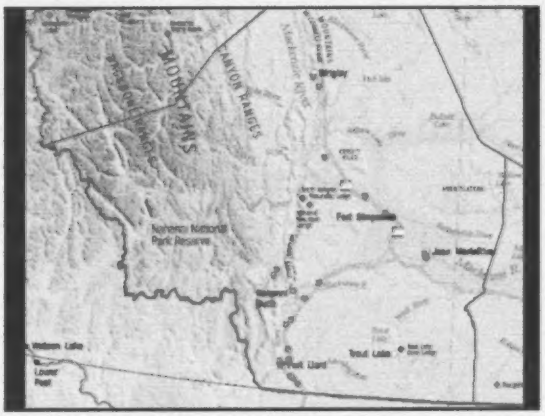
- Fewer species = less complicated disease ecology
- Rate of climate change is faster in the north
  - the dynamics of many diseases expected to change as a result of climate change
- Can test whether *Bd* has recently spread into the NWT (genetics)
  - Is *Bd* a "new" pathogen?
  - Or has something in the environment changed that makes more frogs die from it than before?

Objectives of the surveys

- Amphibian Survey – Dehcho & Sahtu
  - Who's here?
  - Where do they live
  - How abundant are they?
- Collect tissues and screen them for two pathogens
  - *Bd* (Chytrid fungus)
  - Ranaviruses

Survey locations

- Ft. Liard area
- Nahanni Butte area
- Nahanni NPR
- Ft. Simpson area
- Wrigley area
- Jean Marie area
- Norman Wells area
- Colville Lake



Wood Frog
expected to find them in the Dehcho and Sahtu

Chorus Frog
expected to find them in the Dehcho and Sahtu

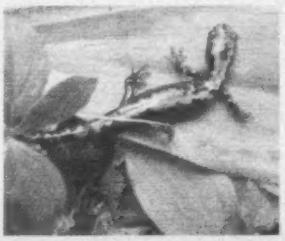
Western Toad (Boreal Toad)

expected in the south Dehcho based on verbal accounts but not range maps

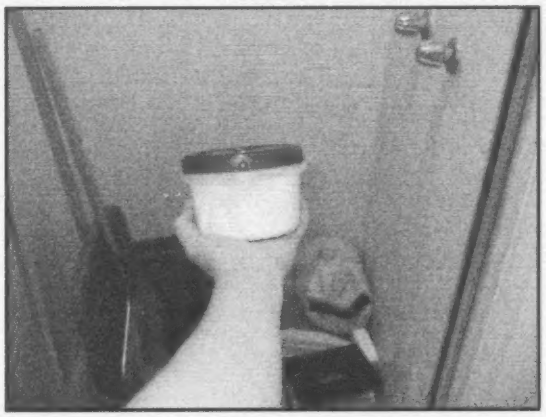
Photo by Lisa Wilkinson

Long-toed Salamander

maybe in south Dehcho?



Identifying, measuring, and taking tissue samples

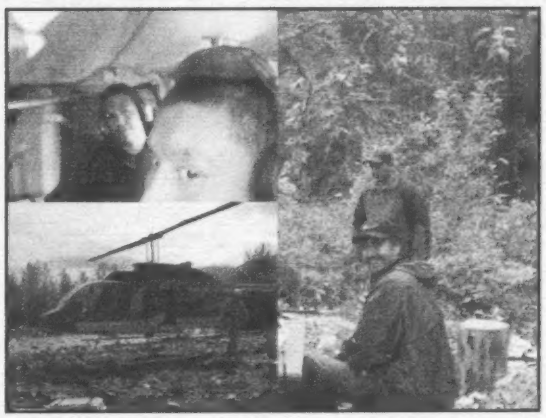


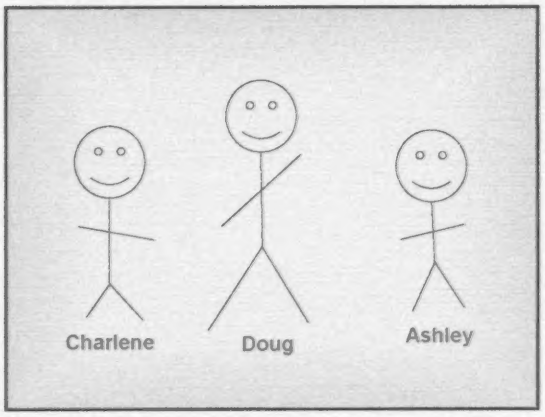
Field survey helpers

Danny Allaire - a most excellent frog catcher and comedian

Gun – a new addition to the equipment needed for amphibian surveys

Shallow slough – one place where wood frogs are found

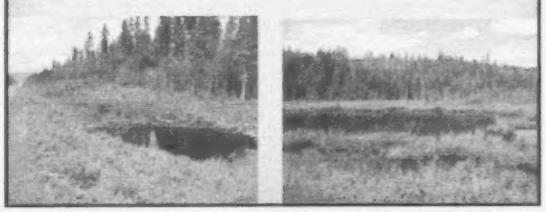




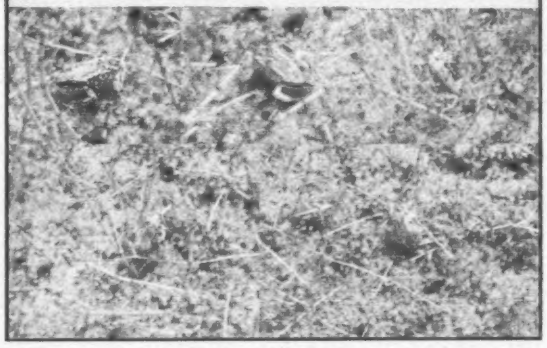
Testing the tissues for pathogens in the lab

Results

Wood frogs, wood frogs,
everywhere wood frogs!

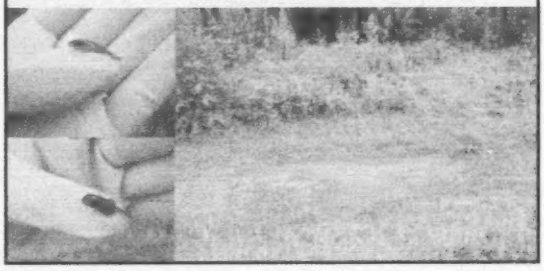


Wood Frogs of many colours!



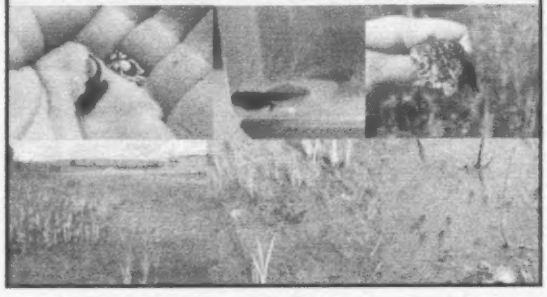
Chorus Frogs

- in Ft. Liard, Nahanni Butte, Ft. Simpson, Wrigley, Jean Marie
  – *but not Norman Wells? not Nahanni NPR?*
- much less abundant than wood frogs
- only found associated with <u>really</u> shallow water



Western Toads

- two sites near Ft. Liard, 20 km apart
- both sites with wood frogs
- one site also with chorus frogs



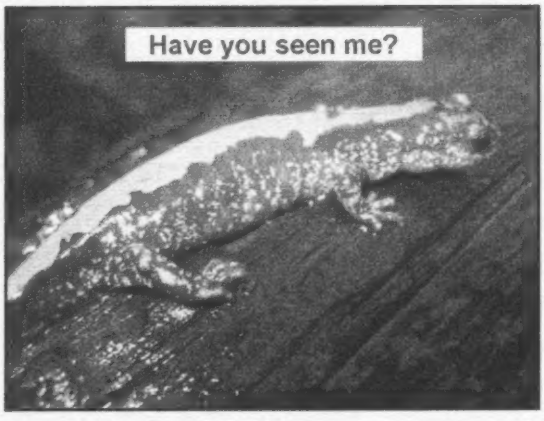
- *750+ individuals tested for pathogens*
- *Bd* in Ft. Liard area - all 3 species of frogs
- Ranaviruses widespread in Wood Frogs
  - from Norman Wells to Ft. Liard

Ongoing

Genetically compare the strains of ranavirus and *Bd* found in the NWT to strains found elsewhere:

Did these pathogens only recently spread into the NWT?

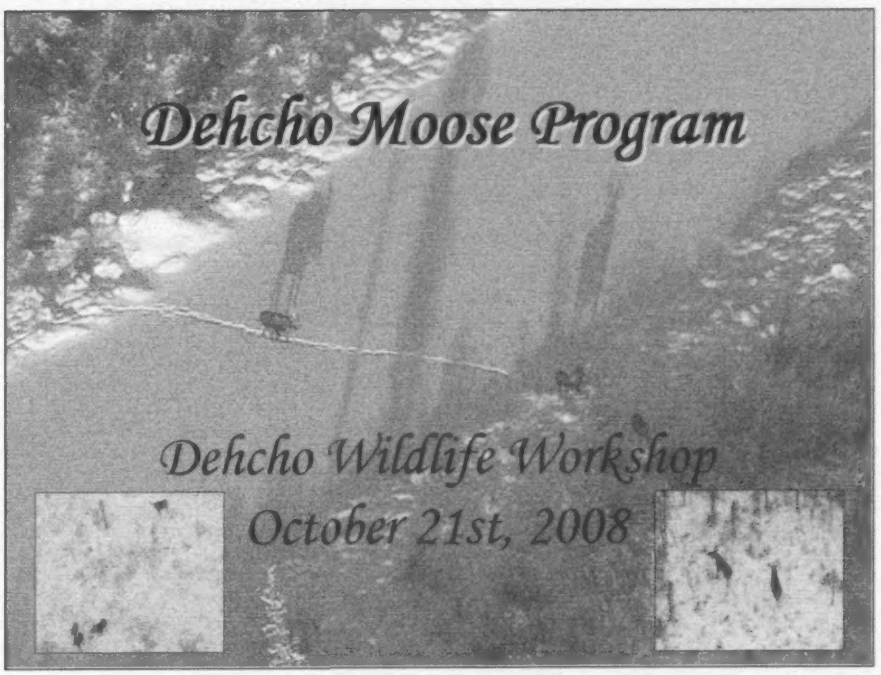
Do these pathogens pose a threat to NWT amphibian populations?



Appendix 5.

Dehcho Moose Program

Presented by Nic Larter, ENR Fort Simpson



Dehcho Moose Program

Dehcho Wildlife Workshop
October 21st, 2008

Objectives

- Document Disease, Parasites, and Contaminants
- Monitor General Animal Health and Condition
- Monitor Animal Density and Calf Production

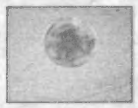
Biological Samples we Collected

What Are Samples Used For?

- Teeth are used to determine animal age
- Kidney and liver provide levels of various elements
- Kidney and its fat weight is an indicator of animal condition
- Femur marrow fat content is an indicator of animal condition
- Muscle is used for genetics and can also be used to provide levels of various elements
- Poop provides incidence of disease and parasites

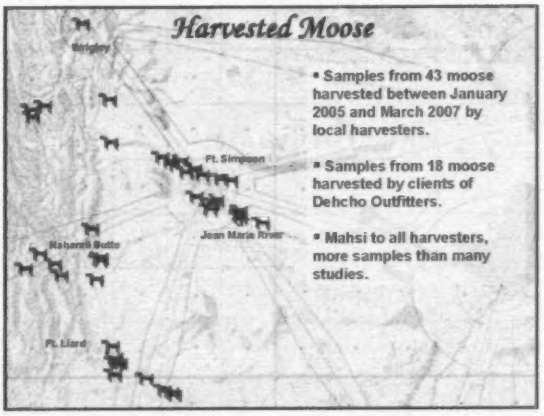
➢ We encourage harvesters to continue active participation in providing samples from their moose.

High marrow fat


Low marrow fat

Abundance of kidney fat

Harvested Moose



- Samples from 43 moose harvested between January 2005 and March 2007 by local harvesters.
- Samples from 18 moose harvested by clients of Dehcho Outfitters.
- Mahsi to all harvesters, more samples than many studies.

What Did We Find?

- The levels of cadmium we found in the kidneys of locally harvested moose were similar to those reported for moose elsewhere in North America and Scandinavia.
- Older moose accumulate cadmium so there is more in their kidneys.
- Cadmium levels were higher in kidneys from moose harvested in the Mackenzie Mountains, a similar finding to work done in Yukon.
- There was a relationship between cadmium levels in the kidney and liver of moose which means in future samples of liver not kidney would let us assess cadmium levels.

What Else Did We Find?

Harvested animals have generally been in good condition for the time of year when harvested

- Harvesters ranked 37/43 moose in excellent or good condition
- Average femur marrow fat was 74%
- Average kidney fat index was 47
- Average moose age was 4.3 (range 0-12)
- No occurrence of *Giardia* or *Cryptosporidium*; 75% of samples had low incidence of common moose parasite *Nematodirus*

Winter Ticks in Moose

Hair Loss Creates "Ghost Moose"

Ticks are:
- small parasites that live on an animals skin and suck blood
- brown, dark shaped with 8 legs and look spider-like
- often found on the neck, shoulders, and back (sometimes the stomach)
- found over the entire body in severe cases

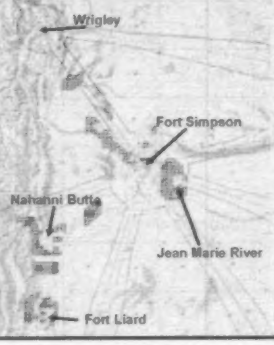
Moose:
- can carry thousands of ticks
- can become weakened through blood loss and skin irritation
- actually lose hair over parts of their body with high tick loads
- meat is not affected by ticks and is suitable for human consumption

Have you seen moose looking like this ?
We encourage harvesters to report anything out of the ordinary

Common Diseases in Moose

- Warts are caused by viruses, spread by direct contact, have little effect on body condition and usually occur in young animals.
- Meat is safe to eat; trim the hide of parts containing warts.
- Tapeworm cysts are often found in the muscle tissue of moose; cooking kills the parasite which can be removed during butchering, but, DO NOT FEED RAW INFECTED PARTS TO DOGS.
- ENR publishes a Field Guide of wildlife diseases/parasites.

Population Characteristics



- Small scale air surveys have been conducted in mid-November since 2004
- Use same blocks as large scale geospatial survey, winter 2003/4
- We have surveyed 34-43 blocks from the Mackenzie River Valley and 20-28 blocks from the Liard River Valley annually from 2004
- We have observed 60-82 moose on these annual surveys
- Consistently estimated at least 35 calf moose/100 cow moose
- Plan on surveying at least 40 and 27 blocks in November 2008
- Will need local observers to participate

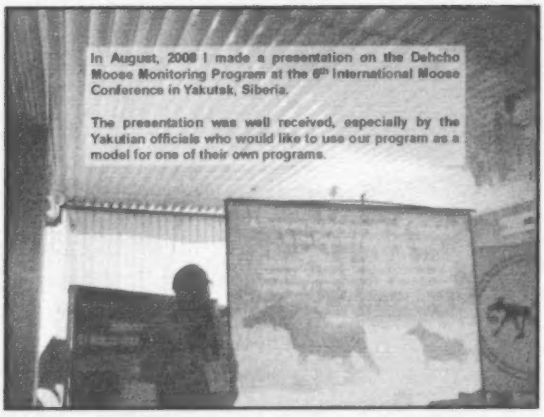
Stable Moose Populations?

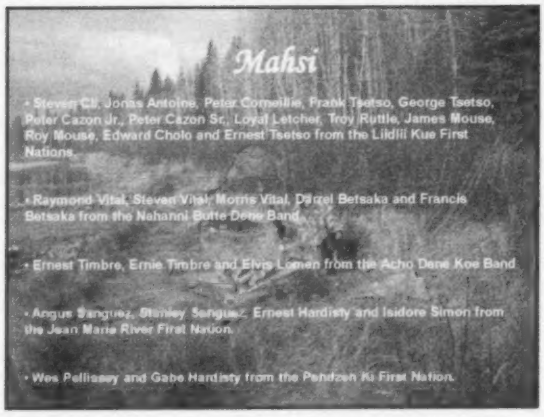
- In 2003/04 density estimates for moose in the Dehcho were 4.4 in the Mackenzie Valley and 4.9 moose/100km^2 in the Liard Valley.
- Density estimates based upon smaller sampling areas ranged from 1.0 to 8.0 moose/100km^2 in surveys conducted 2004-07.
- In November 2003 we estimated the calf:cow ratio's of 32:1.
- Estimated cow:calf ratios for subsequent Novembers based upon the smaller sampling areas have been 40.0 – 58.0.
- Surveys occur after major fall moose harvest which reduces local density and may inflate cow:calf ratios. Accurate harvest data would be required to assess this.
- The total number of females seen in the smaller surveys has been lower which could inflate cow:calf ratios. We continue to see females with twins.
- Local harvesters continue to have success harvesting moose.

Harvest Information?

Not knowing how many moose are harvested each year remains a key piece of the sustainable population puzzle.

We would like to thank all harvesters who have participated in our harvest sampling program thus far.

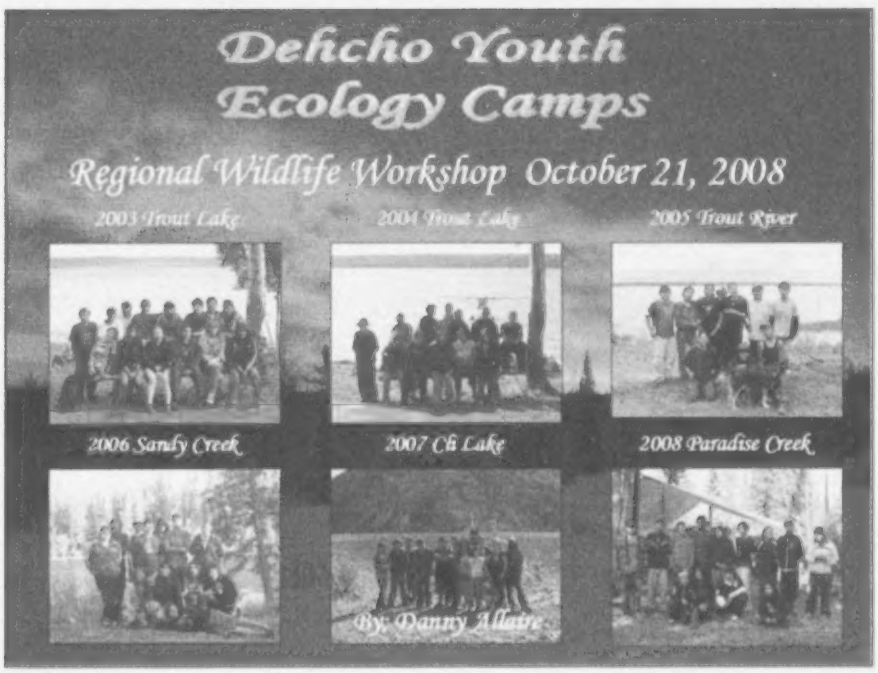

In August, 2008 I made a presentation on the Dehcho Moose Monitoring Program at the 6th International Moose Conference in Yakutsk, Siberia.
The presentation was well received, especially by the Yakutian officials who would like to use our program as a model for one of their own programs.

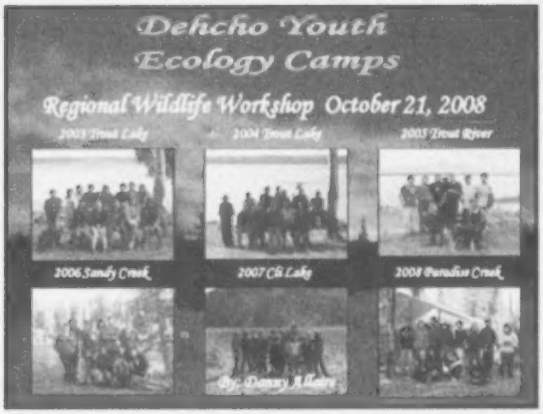

Mahsi
• Steven Cli, Jonas Antoine, Peter Comeillie, Frank Tsetso, George Tsetso, Peter Cazon Jr., Peter Cazon Sr., Loyal Letcher, Troy Ruttle, James Mouse, Roy Mouse, Edward Cholo and Ernest Tsetso from the Lidlii Kue First Nations.
• Raymond Vital, Steven Vital, Morris Vital, Darrel Betsaka and Francis Betsaka from the Nahanni Butte Dene Band.
• Ernest Timbre, Ernie Timbre and Elvis Lomen from the Acho Dene Koe Band.
• Angus Sanguez, Stanley Sanguez, Ernest Hardisty and Isidore Simon from the Jean Marie River First Nation.
• Wes Pellissey and Gabe Hardisty from the Pehdzeh Ki First Nation.

Appendix 6.

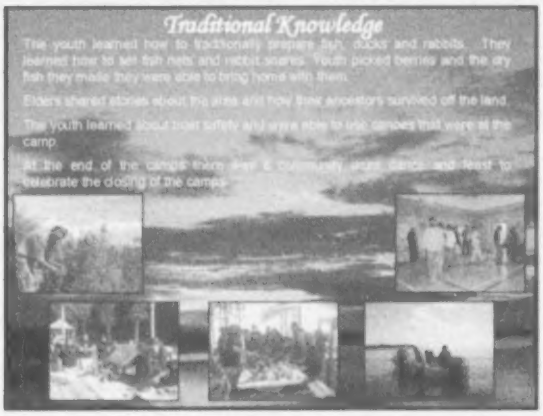
Dehcho Youth Ecology Camps

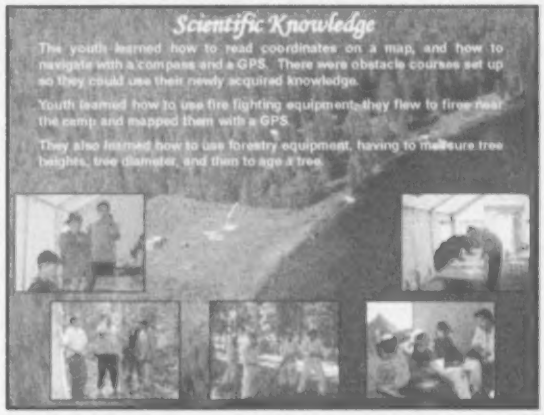
Presented by Danny Allaire, ENR Fort Simpson



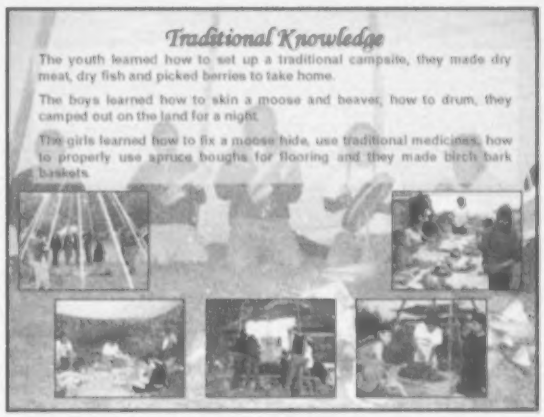

Dehcho Youth
Ecology Camps
Regional Wildlife Workshop October 21, 2008
2003 Trout Lake
2004 Trout Lake
2005 Trout River
2006 Sandy Creek
2007 Ch Lake
2008 Paradise Creek

BASE
• During the first Wildlife Workshop held in 2002, First Nations (FN's) expressed interest in getting the youth to attend science camps out on the land.
• RWED had fire ecology camps in 2000 near Wrigley and in 2001 at the Trout Lake Fire Base.
• In 2003 and 2004 RWED/DCFN successfully applied for funding through CIMP to assist in providing Ecology Camps.
• Trout Lake Fire Base was chosen to host the ecology camps since it had the infrastructure, personnel, location and had hosted a similar camp in 2001.
• RWED, DCFN representatives were at the camp for the duration of the camp, the courses covered both traditional (TEK) and scientific knowledge.


Traditional Knowledge
The youth learned how to traditionally prepare fish, moose and rabbits. They learned how to set fish nets and rabbit snares. Youth picked berries and the dry fish they made they were able to bring home with them.
Elders shared stories about the area and how their ancestors survived off the land.
The youth learned about boat safety and were able to use canoes that were at the camp.
At the end of the camps there was a community arena dance and feast to celebrate the closing of the camps.


Scientific Knowledge
The youth learned how to read coordinates on a map, and how to navigate with a compass and a GPS. There were obstacle courses set up so they could use their newly acquired knowledge.
Youth learned how to use fire fighting equipment, they flew to fires near the camp and mapped them with a GPS.
They also learned how to use forestry equipment, having to measure tree heights, tree diameter, and then to age a tree.

2005 Trout River Ecology Camp
During the 2004 Wildlife Workshop, First Nations requested that Ecology Camps should be moved to different locations to ensure TEK and experiences from different communities throughout the Dehcho Region were available for Dehcho youth.
Land is Life was awarded the 2005 Ecology Camp held at the mouth of Trout River on the Mackenzie River. Staff from Fort Simpson and Jean Marie River were hired for the camp.
Youth questionnaires that were collected from past camps had a clear majority of them wanting more TEK during the ecology camps.


Traditional Knowledge
The youth learned how to set up a traditional campsite, they made dry meat, dry fish and picked berries to take home.
The boys learned how to skin a moose and beaver, how to drum, they camped out on the land for a night.
The girls learned how to fix a moose hide, use traditional medicines, how to properly use spruce boughs for flooring and they made birch bark baskets.

Scientific Knowledge

The students learned how to read coordinates on a map, they learned how to navigate with a GPS.

The students learned how to use forestry equipment, each student had to measure tree heights, tree diameter, and they had to age a tree.

The students learned how to use a VHF receiver and antenna to find VHF collars hidden around the camp.

They also learned about the moose contaminants program and what samples were needed to sample for contaminants.

2006 Sandy Creek Ecology Camp

The Katlodeeche First Nation from the Hay River Reserve was awarded the contract to host the 2006 Ecology Camp. Staff from Hay River and Hay River Reserve were hired for the camp.

The Ecology Camp was held at the mouth of Sandy Creek on the shore of Great Slave Lake.

Traditional Knowledge

The youth learned how to prepare ducks, geese, fish and caribou under the guidance of local elders. The food that was prepared was used during the camp.

The boys got driftwood from Great Slave Lake for the camp. The girls helped out with cooking and cleaning.

They also learned how to properly handle a canoe, make a fire using a flint and set up a traditional campsite.

We had a feast on the second last day of the camp to commemorate another successful ecology camp.

Scientific Knowledge

Youth learned how to find coordinates on a map, how to use a GPS and then they mapped trails around the camp.

Youth learned how to use forestry equipment, and to measure tree height, tree diameter, and how to age a tree.

Youth learned how to use a VHF receiver and antenna to find VHF radio collars hidden around the camp.

2007 Ch Lake Ecology Camp

The North Nahanni Naturalist Lodge Ltd. from the Fort Simpson hosted the 2007 Ecology Camp. Staff from Fort Simpson were hired.

The Ecology Camp was held at Ch Lake on the Nahanni Mountain Range.

Traditional Knowledge

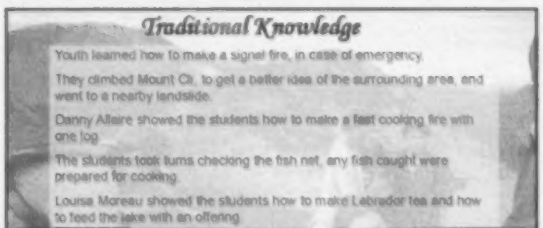
Youth learned how to make a signal fire, in case of emergency.

They climbed Mount Ch, to get a better idea of the surrounding area, and went to a nearby landslide.

Danny Allaire showed the students how to make a fast cooking fire with one log.

The students took turns checking the fish net, any fish caught were prepared for cooking.

Louise Moreau showed the students how to make Labrador tea and how to feed the lake with an offering.



Scientific Knowledge

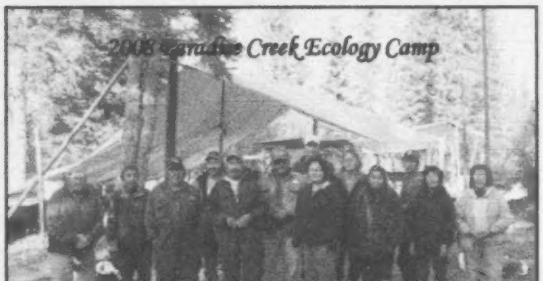
Youth learned how to find coordinates on a map, how to use a GPS and they mapped trails around the camp.

Youth learned how to identify plants using the Wild and Wacky plants of the NWT booklet and dry them at a plant press.

Youth learned how to use a VHF receiver and antenna to find VHF radio collars hidden around the camp.

They were taught firearm safety and about the different types of ammunition and guns available.

2008 Paradise Creek Ecology Camp



The Sambaa Ke Development Corporation Ltd. from Trout Lake hosted the 2008 Ecology Camp. Staff from Trout Lake were hired for the camp.

The Ecology Camp was held at Paradise Creek north of the community on the east side of Trout Lake.

This year there was no scientific knowledge taught; previous youth questionnaires indicated wanting to focus more on TEK.

Traditional Knowledge

Youth learned how to set rabbit snares different ways. All rabbits caught during the camp were prepared and eaten by the camp.

Youth learned how to set a fish net, make dry fish and fillets for cooking. During trips some youth did some fishing.

Youth learned how to set up a proper campsite, and visited some traditional campsites around the lake.

They also learned how to make birch bark and spruce root baskets.

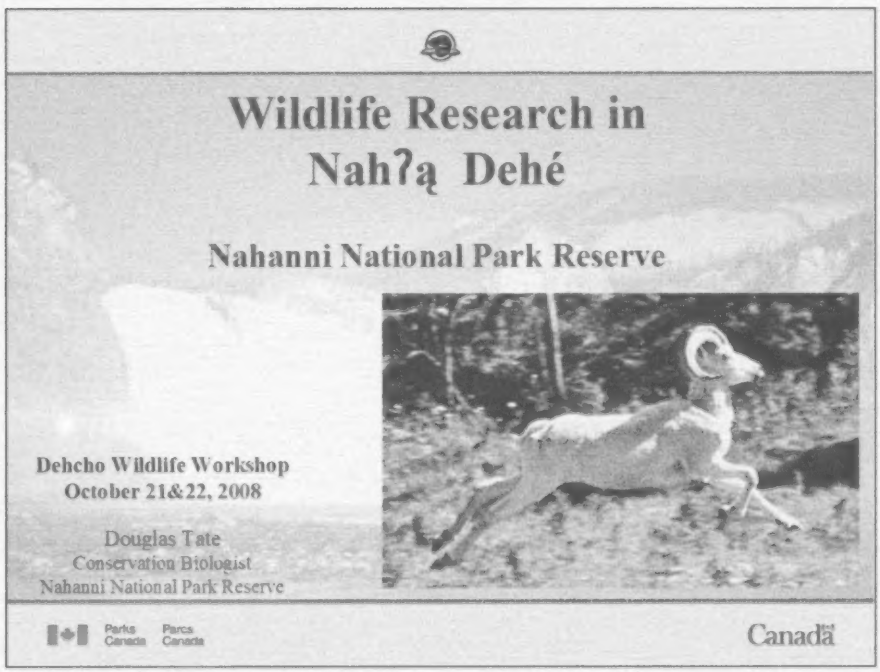
Where do we go from here?

- Last year of guaranteed funding from MACA. ENR/DFN will need to enquire for future camps.
- Youth enrollment always at the last minute, time consuming to get interest
- Less interest in handing in proposals from First Nation's and Organizations.

Appendix 7.

Wildlife Research in Nahanni National Park Reserve

Presented by Doug Tate, Parks Canada Fort Simpson



Wildlife Research in Nah▪ą Dehé

Nahanni National Park Reserve

Dehcho Wildlife Workshop
October 21&22, 2008

Douglas Tate
Conservation Biologist
Nahanni National Park Reserve

Canada

OVERVIEW

I. **Why do Wildlife Research?**
- Parks Canada Mandate
- Reasons for Research & Monitoring

II. **What Should We Study?**
- Developing Research Priorities for Nahanni

III. **What's New?**
- Highlights of Recent Wildlife Studies

IV. **Moving Forward**
- Conclusions and Future Directions

Canada

I. Why do Wildlife Research?

- Parks Canada mandate - to protect representative samples of all of Canada's Natural Regions
- National System Plan - Nahanni National Park Reserve represents the Mackenzie Mountains region
- *Canada National Parks Act* (2000) clearly states that protection of ecological integrity is the first priority of National Parks

Ecological Integrity can be defined as 'the health of the land'

Canada

Canada

II. What should we study?

- January 2000 Workshop (DFN/PC) to determine the state of park ecology, research needs.
  - federal and territorial government representatives
  - scientific researchers
  - local community leaders
  - elders and active harvesters
- June 2000 - formation of Nah▪ą Dehé Consensus Team as part of Deh Cho I.M.A.;
  - 3 appointed by Parks Canada
  - 4 appointed by DFN
  (2 members by Nahanni Butte)
  - Ecological Integrity Statement (2001)
  - Interim Park Management Arrangement (2003)
  - Park Management Plan (2004)

Canada

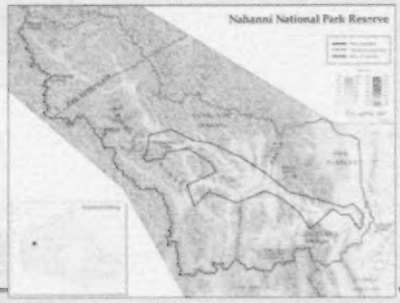
What Should We Study? (cont.)

- Nah▪ą Dehé Consensus Team wrote the Park Management Plan, which:

  - affirms the importance of research, monitoring and traditional knowledge
  - recognizes that Dene are inseparable from the land, and traditional use will continue as a part of the park ecology
  - confirms the South Nahanni River watershed as the primary area of interest and influence in terms of park ecology
  - provides objectives and targets for park management, including wildlife research
- Park Management Plan is to be reviewed in 2009-2010

Canada

Greater Nahanni Ecosystem



Canada

What's New? (Research Highlights)

- Bull Trout
- Listed as 'threatened' in US, 'sensitive' in AB, BC & YT, and 'may be at risk' in NWT (ENR, 2005)
- Southern populations of Bull Trout have declined due to industrial disturbance

- Work with DFO confirmed that Bull Trout, not Dolly Varden, occur in the South Nahanni River watershed
- Impacts to Bull Trout were raised as a concern in a recent Environmental Assessment reports on proposed mining activities at Prairie Creek.

Canada

Bull Trout (continued)

- Bull Trout spawning site was found on Funeral Creek, a tributary of Prairie Creek. Proposed access road to mine goes along this creek.
- Field work up to 2007 has found Bull Trout in many locations below Nailjcho (Virginia Falls), including the entire Flat River.
- No Bull Trout found anywhere above the Falls.
- Lake Trout occur both above and below the Falls, in lakes and in the main river.
- Parts of the Nahanni were not glaciated in the last ice age, and trout from here may have colonized much of Canada.

Canada

Amphibians (Frogs & Toads)

- Wood Frogs known to be widespread in park, and a few records of Boreal Chorus Frogs.
- Old reports of "toads" from Yohin Lake and Nahanni Butte areas, but no photographs. Interested to know if these were Western (Boreal) Toads – a Species at Risk.

- Survey work undertaken in 2007 & 2008 in cooperation with GNWT and Danna Schock (Univ. Calgary)
- Wood Frogs (pictured) found at several sites, no other species encountered.
- Still unknown if Western Toads occur in park.

Canada

Grizzly Bears

- Project undertaken in cooperation with Dr. John Weaver, Wildlife Conservation Society.
- Determine relative abundance and distribution of grizzly bears in and adjacent to park, identify important areas, movement patterns, potential areas of conflict.
- No capturing or handling of bears; barbed wire corral with scent lure - bears investigate but find no food.

- Hair samples caught on wire; additional hairs taken from rub trees. DNA analysis used to identify individual bears.
- Most work in June, avoided visitor & hunting seasons.

Canada

Grizzly Bears (cont.)

Grizzly Bear Survey Grids 2002 – 2005

(Weaver 2006)

Canada

Grizzly Bears (cont.)

- Grizzly bears detected at 49% of scent stations; at least 103 different bears.
- 16 different grizzly bears in the Rabbitkettle Lake area; average of 7 in a year (5 – 8).
- Straight-line movements of up to 91 km observed.
- Model of bear density developed; estimated population of 665 grizzly bears in the Greater Nahanni Ecosystem.
- Information on soapberries (major food source) collected to use as a possible indicator of bear occurrence.

Canada

Moose

- Wildlife Surveys in 1970s & 1980s mapped distribution of moose in park.
- NNPR supports ENR annual moose surveys (Dehcho Region) by contributing extra funding and staff assistance (2003 -08)
- Planned moose surveys in Liard and Mackenzie valleys have been extended into South Nahanni River valley from Nahanni Butte up to Deadmen Valley

Canada

Mountain Caribou

- First radio-collar study 1995 - 97, after request by LKFN; cooperation with GNWT and YTG.
- Traditional knowledge suggested South Nahanni herd was declining.
- Local TK, oral histories, outfitters and Yukon researchers surveyed; estimate of 2000 – 3000 caribou (Gullickson & Manseau 2000).
- Census in 2001 saw only 781 caribou; population estimate of 940 – 1140 animals (GNWT 2002).
- Very low calf:cow ratio (10 per100 cows) suggested poor survival, herd may be declining. Agreed with TK assessment.

Canada

Mountain Caribou (cont.)

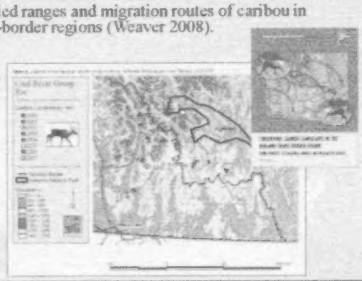
- Additional satellite collar data helped identify four herds or 'groups' of caribou in the South Nahanni watershed.

- Redstone Herd range is mostly in Sahtu, but enters the northern part of South Nahanni watershed and Dehcho Region.
- South Nahanni Herd winters in park river valleys, summers to the northwest along YT-NWT border.
- Coal River and LaBiche herds (a.k.a. Lower Nahanni) winter in park, travel west and south to summer ranges.

Canada

Mountain Caribou (cont.)

- Report identified ranges and migration routes of caribou in Nahanni trans-border regions (Weaver 2008).
- Coal River caribou are particularly susceptible to hunting along Nahanni Range Road (Cantung Road)
- South Nahanni herd also accessible from road, new road proposal through rutting & calving grounds.



Canada

Mountain Caribou (cont.)

- New Study - concerns from First Nations and governments over low numbers of calves, high harvest on Yukon side, and increasing mining activity (esp. road through rutting grounds).
- Cooperative project with Parks Canada, Yukon and NWT Governments, with additional funding from Canadian Parks and Wilderness Society, NWT Chapter.
- Study area overlaps Nahanni National Park Reserve, Yukon Territory, Northwest Territories, including Dehcho Region and Sahtu Region.
- Supported by Dehcho First Nations, Sahtu Renewable Resources Board, and Kaska First Nations

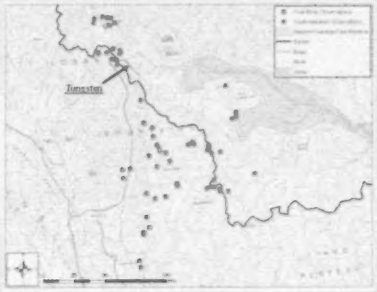
Canada

Mountain Caribou (cont.)

- Composition (Rut) Counts:
  - South Nahanni Herd 26-28 September 2008. Darrell Betsaka of Nahanni Butte participated as community observer.
  - Coal River Herd 03-04 September 2008. Kevin Charlie of Liard First Nation participated as community observer.
- Satellite Collaring:
  - Thirty (30) caribou cows fitted with satellite collars on South Nahanni rutting grounds 30 Sep – 04 Oct 2008.
  - One mortality on Yukon side (caribou fell, broke its neck). Animal was field-dressed; meat delivered to Watson Lake (Liard First Nation).
  - All other collared animals monitored, and showing no problems after release.

Canada

Caribou Composition Surveys - 2008



Canada

Caribou Collaring Locations - 2008

Canada

Caribou Composition Results

	South Nahanni - 2007	South Nahanni - 2008	Coal River - 2008
Calves: 100 Cows (Healthy Herd = 26:100 YC)	17.4 (SE=2.9)	9.5 (SE=1.7)	12.0 (SE=2.9)
Total Bulls: 100 Cows	33.7 (SE=6.1)	35.5 (SE=6.3)	34.3 (SE=6.3)
Immature Bulls: 100 Cows	17.8 (SE=3.5)	17.8 (SE=3.6)	14.8 (SE=3.6)
Mature Bulls: 100 Cows	15.9 (SE=2.4)	17.8 (SE=3.6)	19.7 (SE=3.6)
Number of Groups Seen	31	24	42
Average Group Size	12.6	10.2	5.12
Group Size Range	1 – 44	1 – 60	1 – 37
Total Animals Counted	390	245	341
Estimated Surveying Time (hours)	5.1	12.0	11.3

Canada

Mountain Caribou (cont.)

Next Steps (with Yukon & NWT governments):

- Review survey data (past & present), and available harvest data from Yukon & NWT
- Yukon Government considering regulation changes (permit hunts for Coal River & South Nahanni)
- Investigate patterns of caribou occurrence in relation to roads and/or other disturbances
- Collect movement data from satellite collars
- Rut Surveys planned for fall 2009, fall 2010
- Possible winter survey if required and funds available

Canada

Other Research

- Ongoing record of wildlife sightings including wolves, lynx, mountain goat, Dall's sheep, beaver, etc...
- Breeding bird and spring migration monitoring, record observations on park shifts and patrols

- Periodic surveys for Trumpeter Swans, and raptors (eagles, hawks & falcons)
- Occasional monitoring of rare species such as Upland Sandpiper, Black Tern, Western Toad

Canada

IV. Moving Forward

- Ecological Integrity (health of the land) in Nahʔą Dehé - Nahanni National Park Reserve is good.
- Nahʔą Dehé Consensus Team (NDCT) sets Research Priorities, reviews wildlife research proposals for NNPR.
- NDCT currently consists of:
  - Jonas Antoine
  - George Tsetso
  - Peter Marcellais
  - Darrell Betsaka
  - Ann Ronald
  - Douglas Tate
  - Jennifer Morin
- Watershed Protection – Nahʔą Dehé K'éodii
  - Nahanni Butte and Dehcho First Nations want to work with Parks Canada to protect lands, waters and wildlife of Nahʔą Dehé.
  - Extensive community consultation has occurred; final boundary decision is still under discussion.

Parks Canada Parcs Canada Canada

Mahsi Cho / Thank You

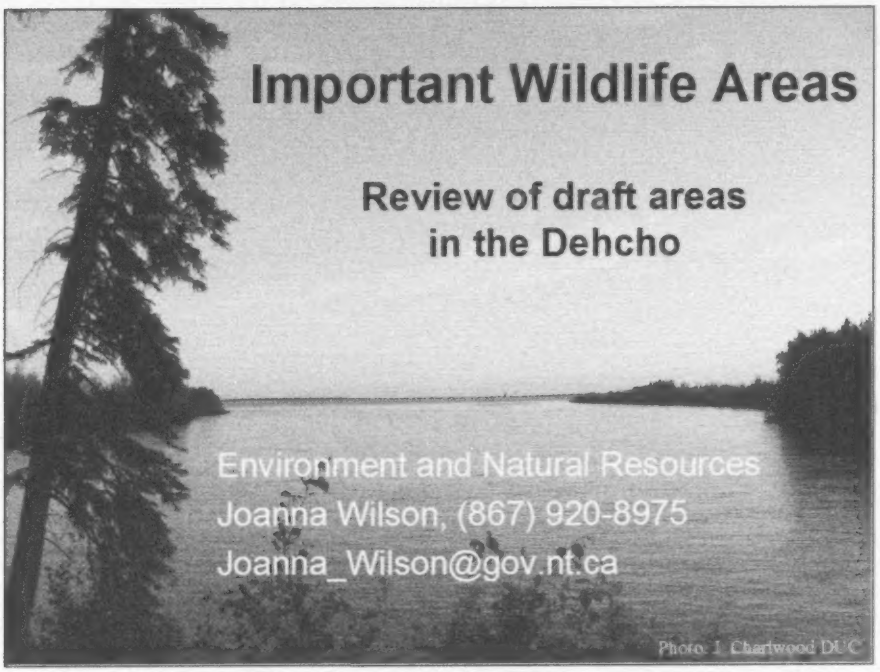
- Environment and Natural Resources (GNWT) & Dehcho First Nations
- Nahʔą Dehé Consensus Team & NNPR Staff
- Yukon Environment
- Canadian Parks and Wilderness Society
- Department of Fisheries and Oceans
- Wildlife Conservation Society
- University of Calgary

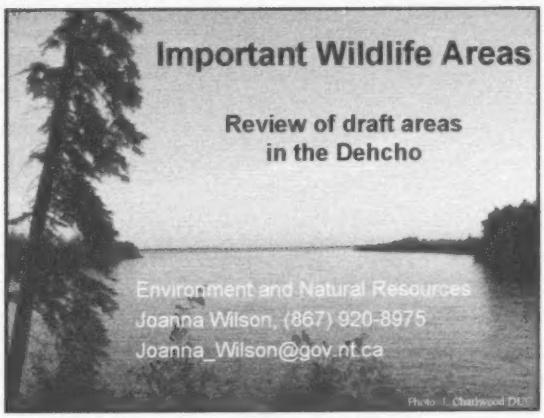
Parks Canada Parcs Canada Canada

Appendix 8.

Important Wildlife Areas: Review of Draft Areas in the Dehcho

Presented by Joanna Wilson, ENR Yellowknife





Purpose

- A public report with maps (update old GNWT report from 1987)
- To provide information for
  - Land Use Plan reviews
  - Protected Areas Strategy
  - Regulatory boards
  - Environmental impact assessment
  - Wildlife management plans

What are 'Important Wildlife Areas'?

Key wildlife habitat areas
that answer 'yes to one of **six questions**

long term importance

What are 'Important Wildlife Areas'?
Six Questions

1. Is it an area that many animals use traditionally, around the same time each year? (e.g. caribou calving grounds)

What are 'Important Wildlife Areas'?
Six Questions

2. Is it a place where animals are usually found in relatively large numbers? (e.g. areas with a high density of bird nests)

What are 'Important Wildlife Areas'?
Six Questions

3. Is it an area that animals repeatedly use when conditions are bad (i.e. refugia)?

What are 'Important Wildlife Areas'?
Six Questions

4. Is it an area with source populations (place where animals come from)?

What are 'Important Wildlife Areas'?
Six Questions

5. Does the species have very low numbers in NWT, or limited habitat, so that the whole year-round range is important? (e.g. western toad)

What are 'Important Wildlife Areas'?
Six Questions

6. Is it a unique area used by many different species? (e.g. mineral licks, hot springs, some wetlands)

What are 'Important Wildlife Areas'?

- NOT all important habitat areas
- NOT all important harvesting areas
- NOT individual den sites, nest sites
- NOT all going to be protected areas

For which species?

- Traditionally important (e.g. moose)
  OR
- "Endangered" or "threatened" status by COSEWIC (e.g. wood bison)
  OR
- "Special concern" by COSEWIC ***and*** NWT status rank of "sensitive" or higher (e.g. grizzly bear)

...and GNWT mandate (excludes fish, waterfowl, marine mammals)

Species List

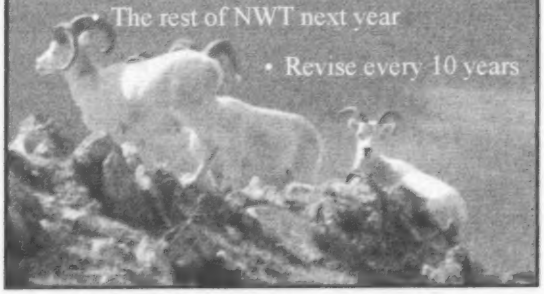
Barren-ground caribou
Boreal woodland caribou
Mountain woodland caribou
Peary and Dolphin-Union caribou
Dall's sheep
Moose
Mountain goat
Muskox
Wood bison
Beaver
Grizzly bear
Lynx
Marten
Muskrat
Polar bear
Wolverine
Northern leopard frog
Western toad
Peregrine Falcon

Unique Areas
- Hot and warm springs
- Mineral licks
- Other unique areas

IWA won't work equally well for all species

Timeline

- Mackenzie Valley 'plus' for now (Dehcho, Sahtu, Gwich'in, Inuvialuit)
- The rest of NWT next year
- Revise every 10 years



Where did the draft maps come from?

- Harvesters (Dehcho Regional Wildlife Workshop 2006)
- Biologists (ENR regional staff)
- Reports (DLUPC Wildlife Working Group 2003)

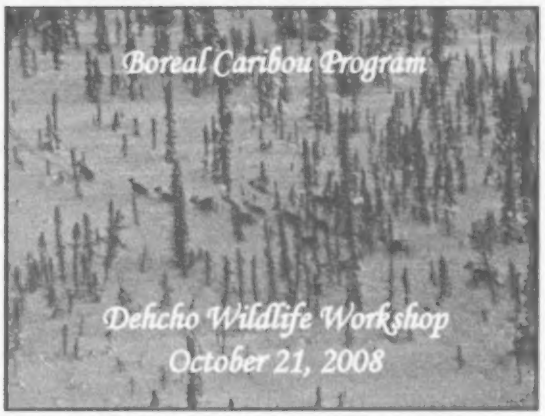
Expert opinions

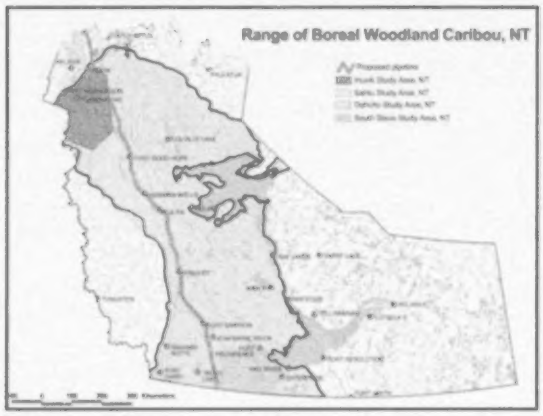
We need your input!

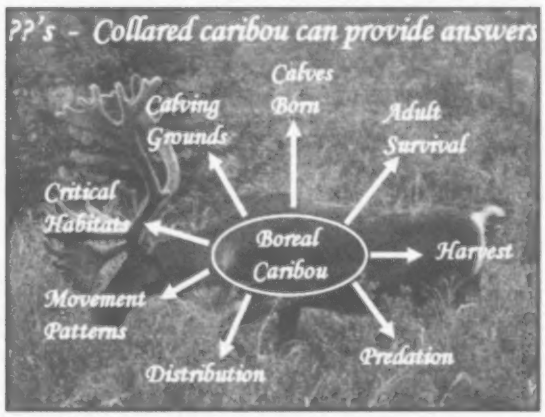
Appendix 9.

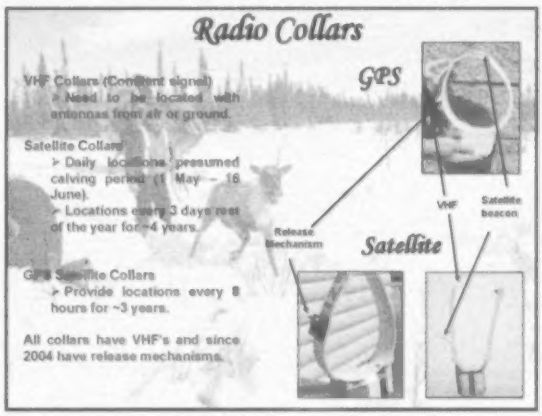
Dehcho Boreal Caribou Program

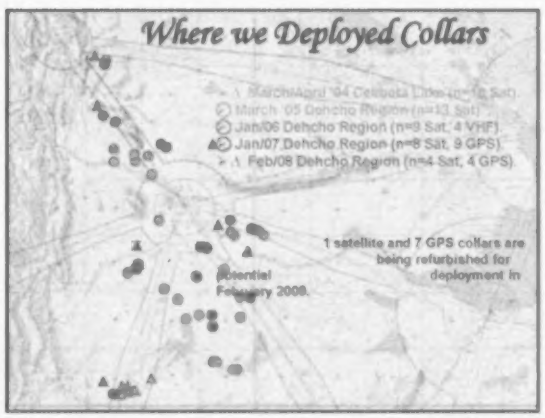
Presented by Nic Larter, ENR Fort Simpson

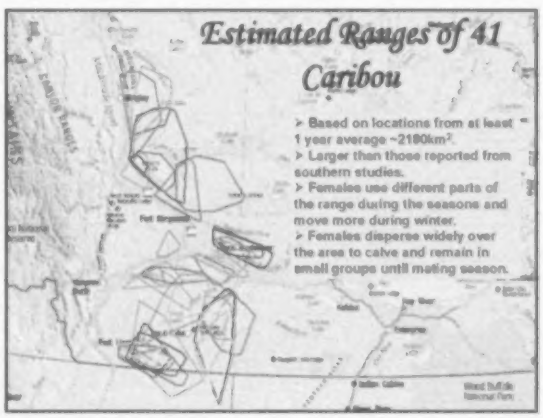

Boreal Caribou Program
Dehcho Wildlife Workshop
October 21, 2008

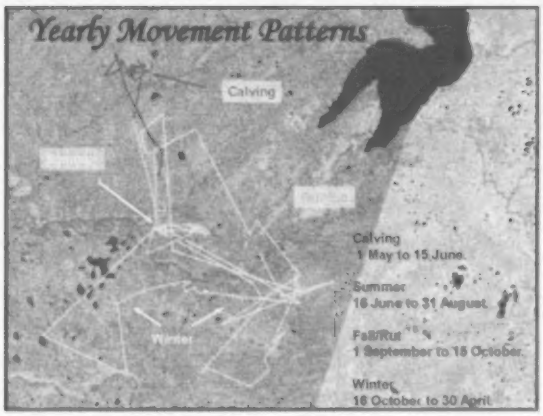

Range of Boreal Woodland Caribou, NT

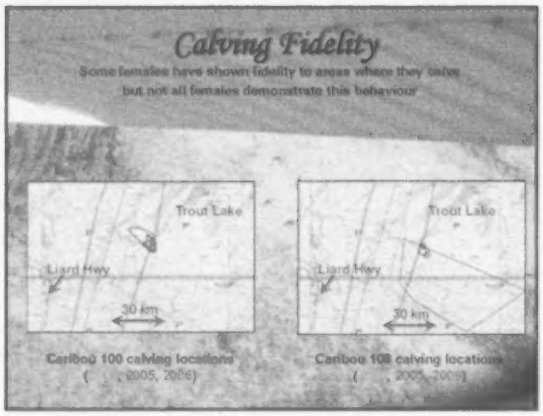

??'s - Collared caribou can provide answers
Calving Grounds
Calves Born
Adult Survival
Critical Habitats
Boreal Caribou
Harvest
Movement Patterns
Distribution
Predation

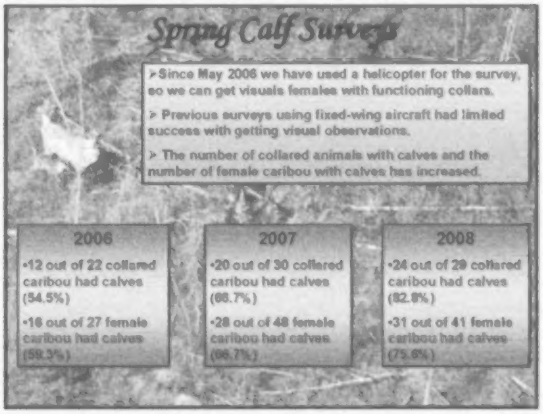

Radio Collars
VHF Collars (Constant signal)
➢ Need to be located with antennas from air or ground.
Satellite Collars
➢ Daily locations (presumed calving period (1 May – 15 June).
➢ Locations every 3 days rest of the year for ~4 years.
GPS Satellite Collars
➢ Provide locations every 8 hours for ~3 years.
All collars have VHF's and since 2004 have release mechanisms.
GPS
VHF
Satellite beacon
Release Mechanism
Satellite

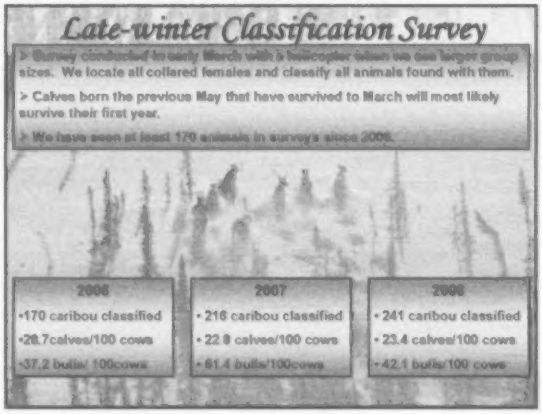

Where we Deployed Collars
March/April '04 Cerbota (n=10 Sat)
March '05 Dehcho Region (n=13 Sat)
Jan/06 Dehcho Region (n=9 Sat, 4 VHF)
Jan/07 Dehcho Region (n=8 Sat, 9 GPS)
Feb/08 Dehcho Region (n=4 Sat, 4 GPS)
1 satellite and 7 GPS collars are being refurbished for deployment in essential February 2009.

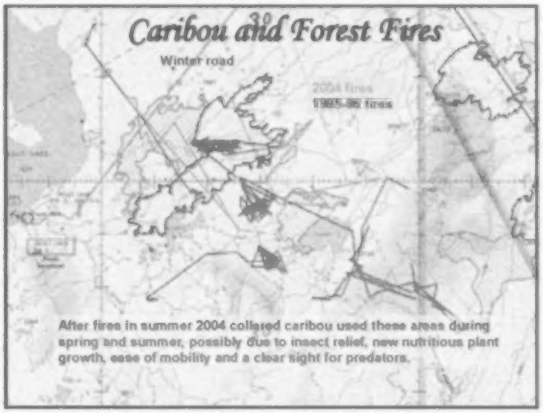

Estimated Ranges of 41 Caribou
➢ Based on locations from at least 1 year average ~2180km².
➢ Larger than those reported from southern studies.
➢ Females use different parts of the range during the seasons and move more during winter.
➢ Females disperse widely over the area to calve and remain in small groups until mating season.

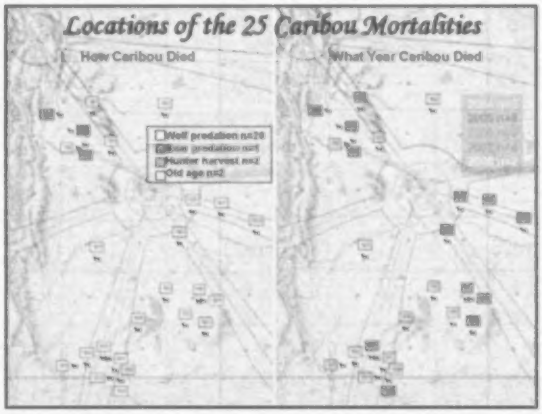

Yearly Movement Patterns
Calving
Summer
Fall/Rut
Winter
Calving
1 May to 15 June.
Summer
16 June to 31 August.
Fall/Rut
1 September to 15 October.
Winter
16 October to 30 April.


Calving Fidelity
Some females have shown fidelity to areas where they calve
but not all females demonstrate this behaviour
Trout Lake
Liard Hwy
30 km
Caribou 100 calving locations
(, 2005, 2006)
Trout Lake
Liard Hwy
30 km
Caribou 108 calving locations
(, 2005, 2006)


Spring Calf Surveys
➢Since May 2006 we have used a helicopter for the survey, so we can get visuals females with functioning collars.
➢ Previous surveys using fixed-wing aircraft had limited success with getting visual observations.
➢ The number of collared animals with calves and the number of female caribou with calves has increased.
2006
•12 out of 22 collared caribou had calves (54.5%)
•16 out of 27 female caribou had calves (59.3%)
2007
•20 out of 30 collared caribou had calves (66.7%)
•28 out of 48 female caribou had calves (58.7%)
2008
•24 out of 29 collared caribou had calves (82.8%)
•31 out of 41 female caribou had calves (75.6%)


Late-winter Classification Survey
➢ Survey conducted in early March with a helicopter when we see larger group sizes. We locate all collared females and classify all animals found with them.
➢ Calves born the previous May that have survived to March will most likely survive their first year.
➢ We have seen at least 170 animals in surveys since 2006.
2006
•170 caribou classified
•28.7calves/100 cows
•37.2 bulls/ 100cows
2007
• 216 caribou classified
• 22.9 calves/100 cows
• 61.4 bulls/100cows
2008
• 241 caribou classified
• 23.4 calves/100 cows
• 42.1 bulls/100 cows


Caribou and Forest Fires
Winter road
2004 fires
1985-86 fires
After fires in summer 2004 collared caribou used these areas during spring and summer, possibly due to insect relief, new nutritious plant growth, ease of mobility and a clear sight for predators.


Locations of the 25 Caribou Mortalities
How Caribou Died
What Year Caribou Died
Wolf predation n=20
Bear predation n=1
Hunter harvest n=2
Old age n=2

Mortalities

- Most (21/25) mortalities occur between mid-March and mid-July, similar to elsewhere in NT.
- Mean adult female survival estimated at 74%, intermediate between NT study areas.
- Ages from teeth retrieved from 9 females are 5, 6, 7, 10, 11, 14, 15, 15, and 17.
- Blood tests indicate that 3 caribou were pregnant at 10, 13, and 18 years of age.
- Distance from linear features or well established cumulative cuts
  - 10 were <100m away
  - 5 were 125-351m away
  - 4 were 500-800m away
  - 3 were 1.0-3.5km away
  - 1 on a lake surrounded by linear features

Collar Lifespan Population Monitoring

7 active collars
3 down & 2 next year

- 1st set of collars are done lifecycle
- 2nd set of collars done next summer
- Will have only 18 active collars next summer

4 active collars
3 down

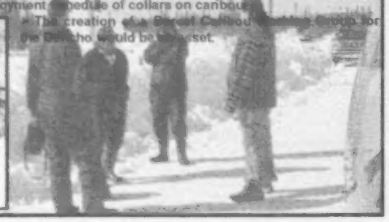
8 active collars
1 down & 3 next year

5 active collars
1 down & 2 next year

1 active collar
1 down

What next?

- The Action Plan on Boreal Woodland Caribou is due to be released shortly there will be an opportunity for all First Nations to review and respond to the document.
- The Dehcho Boreal caribou program has been key in the development of this action plan.
- Even if we pare back on some of the more detailed work in the future we need to monitor populations which will require a certain number of active radio collars.
- We need to discuss the number, type, location, and deployment schedule of collars on caribou.
- The creation of a Boreal Caribou Working Group for the Dehcho would be a first step.



If we believe that caribou populations in the north and south parts of the Dehcho are biologically differently then we must have an adequate monitoring protocol for both populations.

South more seismic, less burnt

North less seismic, more burnt

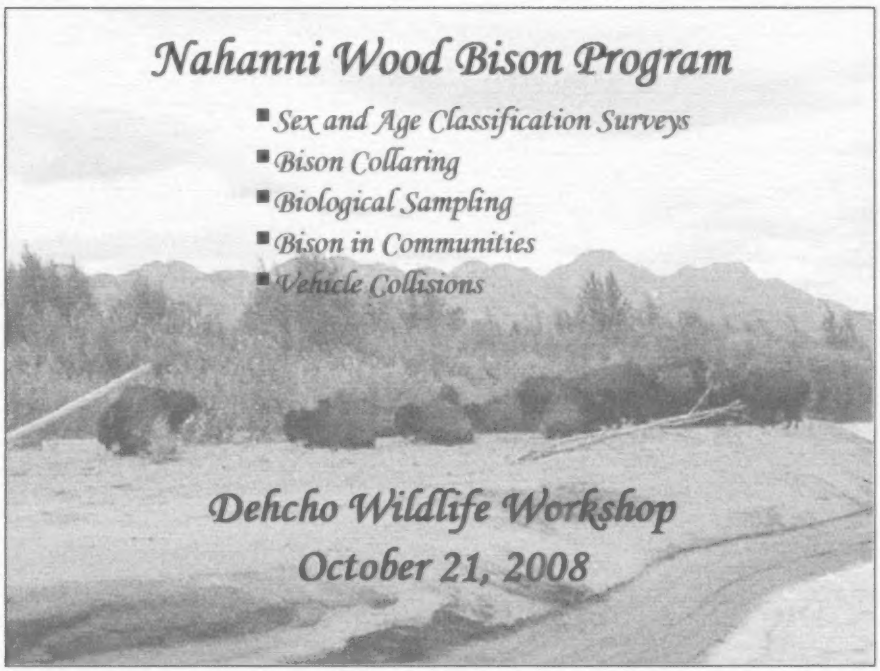
Questions?
.... and thanks

Chief Dennis Deneron (Sambaa K'e Dene Band) has been an avid proponent of this program since its inception. With the expanded program support has come from Chiefs Keyna Norwegian, Fred Tesson, Darcy Moses, and Stanley Sanguez and President Mack Lafferty of Liidlii Kue First Nation, Nahanni Butte Dene Band, Pehdzeh Ki First Nation, Jean Marie River First Nation, and Fort Simpson Metis, respectively. We thank Jonas Antoine, Edward Cholo, Steven Cli, Peter Cornelle, David Jumbo, Edward Kambly Tony Jumbo, Victor Jumbo, Ronnie Kolchea, Jonas Lafferty, Andrew Lomen, Raymond Minoza, and Jonas Sanguez for their assistance with various aspects of the program.

Appendix 10.

Nahanni Wood Bison Program

Presented by Nic Larter, ENR Fort Simpson

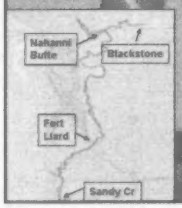


Nahanni Wood Bison Program

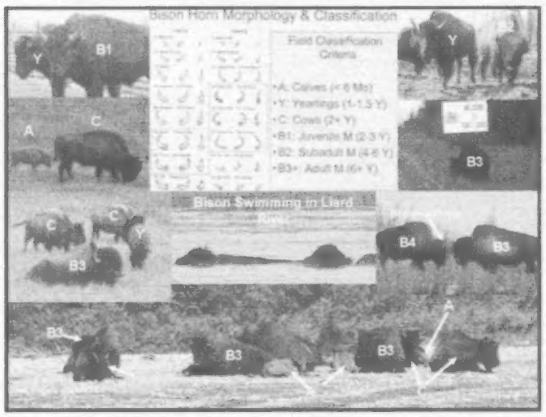
- Sex and Age Classification Surveys
- Bison Collaring
- Biological Sampling
- Bison in Communities
- Vehicle Collisions

Dehcho Wildlife Workshop
October 21, 2008

Sex and Age Classification Surveys



- Surveys conducted annually starting in 2002.
- Surveys are 2-3 days long and cover the Liard and South Nahanni Rivers, generally north from Sandy Creek to Nahanni Park and Blackstone River.
- Surveys are conducted in mid-July when bison frequent the sandbars and shoreline avoiding heat and insects.
- Survey routes are tracked [illegible] GPS; observations recorded as waypoints.

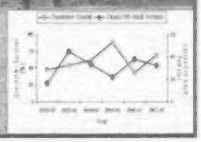

Bison Horn Morphology & Classification
Field Classification Criteria
•A: Calves (< 6 Mo)
•Y: Yearlings (1-1.5 Y)
•C: Cows (2+ Y)
•B1: Juvenile M (2-3 Y)
•B2: Subadult M (4-6 Y)
•B3+: Adult M (6+ Y)
Bison Swimming in Liard River

Classification Survey Results

	2002	2003	2004	2005	2006	2007	2008
# bison classified	131*	154	137	138	187	184	181
# calves/100 females	28	56	42	28	47	41	38
# yearlings/100 females	17	10	31	26	25	20	28
# mature males/100 females	48	50	40	50	72	52	56

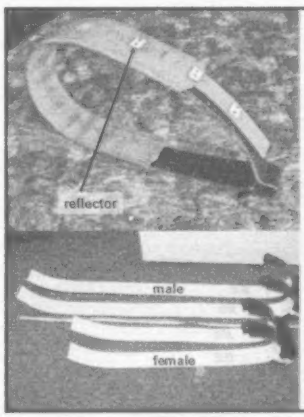
* Included group of 42 classified at Beaver Camp prior to survey

- We consistently observe >130 animals/survey
- Calf production shows great annual variation.
- Overwinter survival of calves increased through 2005-06.
- Population stable, likely increasing slowly.



Bison Collaring

- ENR with assistance of YTG staff collared 6 female and 3 male Nahanni Bison in July 2007.
- High river water levels greatly restricted collaring opportunities; 4 collars were not deployed.
- Seven animals were collared near Ft Liard, 1 near Nahanni Butte.



Collars Deployed

- VHF for males in communities, with reflectors (n=3), require locating with receivers.
- Satellite collars for males and females; locations every 3 days but daily locations during calving period (May) for females (n= 1) and during the rut (August-September) for males (n=2).
- GPS collars for females which provide 2 locations/day (n=2).

Initial Findings

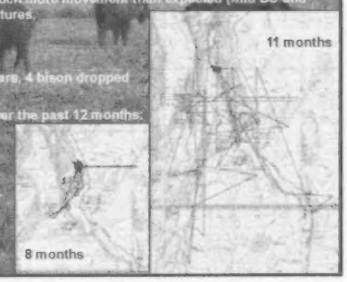
GOOD NEWS

- Bulls collared in the community: 1 bull did frequent town, 1 bull is rarely in town and is currently on an island south of town.
- GPS collar information from 2 females: the first detailed movement data on wood bison showed much more movement than expected (into BC and YT) and a use of linear features.

BAD NEWS

- Bison are rough on collars, 4 bison dropped collars within 12 months.
- 3 collared bison died over the past 12 months: 1 drowned, 1 vehicle collision and 1 shot.

ENR will deploy up to 11 collars (3 VHF, 4 GPS, and 4 Satellite) over the entire range in November 2008.



Biological Sampling

- ENR tries to collect a variety of biological samples from harvested and/or dead animals depending upon the condition of the carcass.
- Blood and lymph nodes are important for disease screening. We have not had a positive test for brucellosis or tuberculosis from any Nahanni bison samples and anthrax has never been detected in the Nahanni bison range.
- We also collect whenever possible teeth for aging, stomach contents and/or poop for diet, disease, and parasites, and long bones for measuring marrow fat content.

Bison in Communities

- Historically most activity occurs during summer, prior to the rut. In recent years high river water levels have been a factor in the increased incidence of bison in communities.

Recent Initiatives

- Increasing the quota from 1 to 6 bison annually for Fort Liard
- Actively hazing bison out of the communities
- Experimenting with electric fences around property
- Mapping the bison trails and active wallow sites in the community
- Actively removing "problem" animals as a safety issue

Electric Fencing Experiment

- ENR staff set up an electric fence around a property in Fort Liard as a pilot project to see if the fence would deter bison.
- For a month during summer no bison came onto the property, however the fence was turned off because of a public safety issue.
- ENR hopes to continue to experiment with this fence in future.

Removing "Problem" Bison

- On 2 occasions to date "problem" bison were removed from Fort Liard; 3 in March 2008 and another 3 in September/October 2008.
- Staff of ENR have hired local residents in these operations which has included skinning, and hanging of the meat prior to cutting, packaging and distribution to the local community; skulls and hides have been provided to local community members.

Motor Vehicle Collisions

- Collisions between vehicles and bison over the past 2 years were rare on the Liard Hwy, unfortunately a collared female bison was lost in a collision.
- Possibly the 8 new warning signs DOT/ENR added in spring 2005 have helped.
- There is now a formal DOT/ENR protocol for collecting and documenting as much information as possible from motor vehicle collisions and salvaging the meat.
- Timely reporting of collisions is essential.

Thanks

We thank the following for their active participation in the bison program: Frank Kotchea, Brian Kotchea, David Duntra, Michael Sassie, Isadore Lomen, Earl Hope, Peter Bertrand, Ernest Timbre, Ernie and Angus McLeod from the Acho Dene Koe Band, and Francis Betsaka, Ernie Isaiah, Sam Ekotla, George Tsetso, Steve and Raymond Vital from the Nahanni Butte Dene Band.